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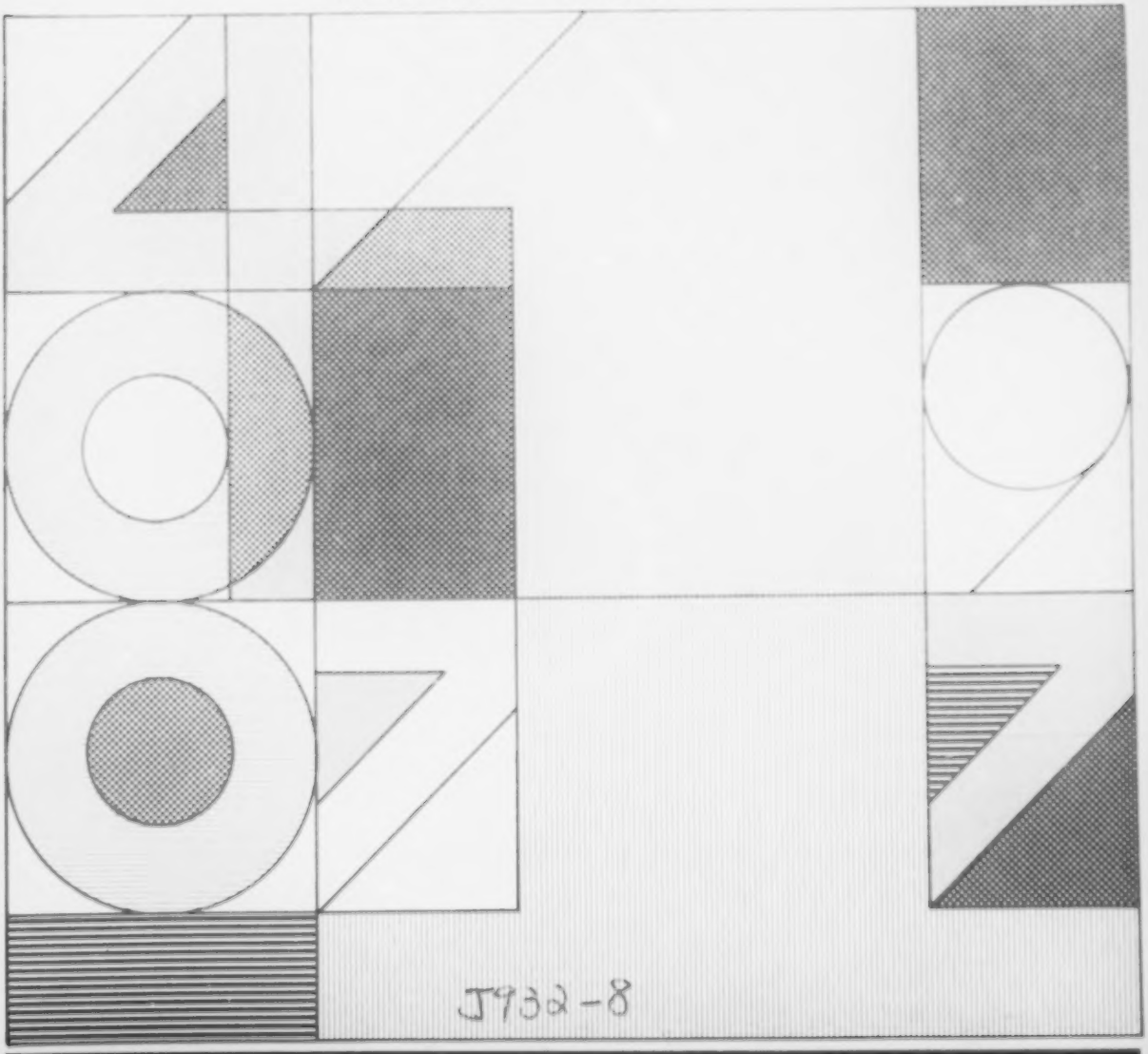
FEBRUARY 1988

The Economic and Budget Outlook: Fiscal Years 1989-1993

A Report to the Senate and House Committees on the Budget—Part I

As Required by Public Law 93-344



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1988 ANNUAL REPORT

THE ECONOMIC AND BUDGET OUTLOOK:

FISCAL YEARS 1989 - 1993

The Congress of the United States
Congressional Budget Office

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NOTES

Unless otherwise indicated, all years referred to in Chapter I are calendar years and all years in Chapter II are fiscal years.

Unemployment rates throughout the report are calculated on the basis of the civilian labor force.

Details in the text and tables of this report may not add to totals because of rounding.

Figures showing periods of recession (indicated by a shaded area) reflect the peak (P) and trough (T) of the recession.

The Balanced Budget and Emergency Deficit Control Act of 1985 (popularly known as Gramm-Rudman-Hollings) is also referred to in this volume more briefly as the Balanced Budget Act.

PREFACE

This volume is one of a series of reports on the state of the economy and the budget issued periodically by the Congressional Budget Office (CBO). It satisfies the requirements of sections 202(f) and 308(c) of the Congressional Budget Act of 1974 to submit an annual report to the Committees on the Budget with respect to fiscal policy and to provide five-year baseline projections for the federal budget. In accordance with CBO's mandate to provide objective and impartial analysis, the report contains no recommendations.

Work on this report was initiated under the direction of Edward M. Gramlich, who also made valuable comments on its many drafts. Paul N. Van de Water prepared the Summary of the report.

The analysis of the economic outlook presented in Chapter I was prepared by the Fiscal Analysis Division under the direction of Jacob S. Dreyer, with the assistance of Robert Dennis, Victoria S. Farrell, George Iden, and John F. Peterson. Important contributions were made by Trevor Alleyne, Katherine Barnum, John Canally, Jr., Suzanne Cooper, Douglas R. Hamilton, James Kiefer, Stephen Miller, Frank S. Russek, Jr., John Sabelhaus, Matthew A. Salomon, John R. Sturrock, Stephan S. Thurman, and Bragi Valgeirsson.

The baseline outlay projections presented in Chapter II were prepared by the staff of the Budget Analysis Division, under the supervision of James L. Blum, C.G. Nuckols, Michael A. Miller, Charles E. Seagrave, Robert A. Sunshine, and Paul N. Van de Water. The revenue estimates were prepared by the staff of the Tax Analysis Division, under the supervision of Rosemary D. Marcuss and Kathleen M. O'Connell. Principal staff contributors are listed in Appendix H.

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Paul L. Houts supervised the editing and production of this report, assisted by Nancy H. Brooks. Major portions were edited by Amanda Balestrieri, Francis S. Pierce, and Sherry Snyder. The authors owe special thanks to Debra Blagburn Linda Brockman, Marion Curry, Janice Johnson, Dorothy J. Kornegay, and L. Rae Roy, who typed the many drafts. Kathryn Quattrone prepared the report for publication.

James L. Blum
Acting Director

February 1988

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SUMMARY

In the closing days of 1987, the Congress and the Administration negotiated and largely put in place a plan to reduce the budget deficit for 1988 and 1989. At the same time, in the wake of the stock market collapse, signs of some temporary weakness in the economy began to emerge. The Congressional Budget Office (CBO) now anticipates that the economy will experience a pronounced slowdown in growth in early 1988, but will regain strength in the second half of 1988 and in 1989. On the basis of CBO's economic assumptions and a continuation of current budgetary policies, the federal deficit is projected to rise from $150 billion in 1987 to $157 billion in 1988 and $176 billion in 1989, before dropping to $167 billion in 1990.

These baseline budget projections assume that revenues, offsetting receipts, and entitlement spending are projected according to the laws now on the statute books. Defense and nondefense discretionary appropriations are assumed to be held constant in real terms. The baseline projections are, therefore, not forecasts of future budgets, which will doubtless include numerous policy changes. This year CBO has made minor changes in its baseline to make it identical to the budget base as specified in the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (Public Law 100-119). Having a single baseline is intended to help focus attention on the fundamentals of the budget situation and reduce any confusion stemming from minor conceptual differences.

THE SHORT-RUN BUDGET SITUATION

On November 16, as required by the Balanced Budget Reaffirmation Act of 1987, CBO reported that the budget deficit for 1988 would be $180 billion under laws then in effect. It also projected a deficit of $186 billion in 1989 and $166 billion in 1990. These estimates were based on CBO's August economic and technical estimating assumptions. How have the budget estimates changed since November?

On November 20, Congressional leaders and the President announced that they had reached a budget agreement covering the next two fiscal years. This agreement, or budget summit, was intended to reduce the deficit by $30 billion in 1988 and $46 billion in 1989 from the Balanced Budget Act baseline. The results of the budget summit were almost entirely incorporated in two bills--the continuing resolution of appropriations (Public Law 100-202) and the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203)--signed by the President on December 22. These laws reduced the 1988 deficit by an estimated $34 billion, comprising $23 billion in lower spending and $11 billion in additional revenues. The projected deficit reduction will then swell to $36 billion in 1989 and $40 billion in 1990, assuming that spending programs subject to annual appropriation action are allowed to grow by only the rate of inflation (see Summary Table 1).

While policymakers were working hard to reduce the deficit, however, a deterioration in the economic outlook was eroding some of their improvements. CBO's updated economic assumptions add $9 billion to the deficit in 1988, $21 billion in 1989, and $33 billion in 1990, compared with the November estimates. In 1988 and 1989, most of these changes result from lower tax revenues brought on by the forecast of a slowdown in economic growth. By 1990, however, the primary factor is a projected increase in interest rates, which adds to the costs of servicing the national debt.

Changes in technical estimating methods and assumptions have increased the projected deficit slightly--by $2 billion in 1988, $6 billion in 1989, and $8 billion in 1990--since CBO's November report. These reestimates result primarily from newly available data that permit a better estimate of the effects of the Tax Reform Act of 1986 (Public Law 99-514). Technical revisions in outlay estimates, while large for some individual programs, are negligible in total in most years.

The recent policy actions and economic and technical reestimates have not changed the pattern of the deficit: it fell sharply in 1987, will rise in 1988 and 1989, and will fall again in 1990. This jagged shape is largely the result of the phase-in of the Tax Reform Act of 1986 and of various one-time outlay savings. Tax reform added $22 billion to revenues in 1987 but reduces tax collections by $10 billion in 1988 and $16 billion in 1989. Asset sales and other one-time spending cuts hold down outlays by $15 billion in 1987 and $7 billion in 1988. The 1988

savings result from loan prepayments permitted by the recent appropriation and reconciliation bills. Were it not for these special factors, the pattern of the deficits would be much smoother, as shown in Summary Figure 1. The deficit would have fallen less sharply in 1987--to about $187 billion--and would then fall further to about $160 billion, where it would remain for several years.

SUMMARY TABLE 1. BASELINE DEFICIT PROJECTIONS FOR 1988-1990 (By fiscal year)

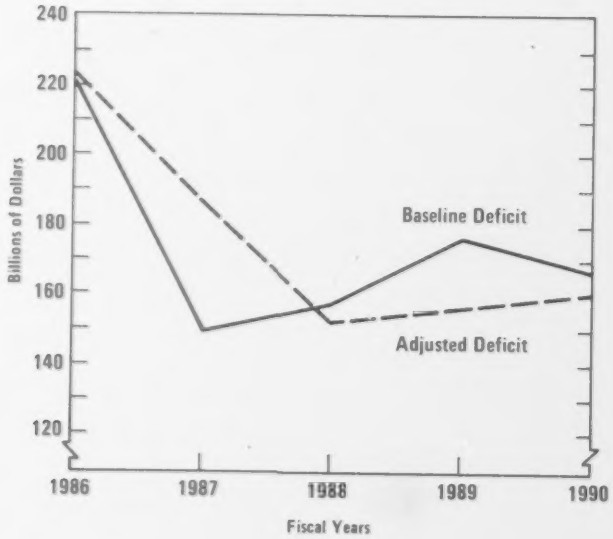
	Actual		Projections		
	1986	1987	1988	1989	1990
In Billions of Dollars					
November 1987 Base Deficit for Balanced Budget Act	221	150	180	186	166
Changes for:					
Enacted legislation	--	--	-34	-36	-40
Updated economic assumptions	--	--	9	21	33
Technical reestimates	--	--	2	6	8
Total changes	--	--	-23	-10	1
February 1988 Baseline Deficit	221	150	157	176	167
Adjustments for:					
Tax reform	--	22	-10	-16	-4
One-time outlay savings	2	15	7	a/	a/
Total adjustments	2	37	-3	-17	-4
Adjusted Deficit	223	187	154	159	163
As a Percentage of GNP					
Baseline Deficit	5.3	3.4	3.4	3.5	3.1
Adjusted Deficit	5.4	4.2	3.3	3.2	3.1

SOURCE: Congressional Budget Office.

a. Less than $500 million.

The baseline deficits of $176 billion in 1989 and $167 billion in 1990 are well above the Balanced Budget Reaffirmation Act targets of $136 billion and $100 billion. The amount of deficit reduction required in 1989 is limited by law to $36 billion. Implementing the rest of the budget summit in 1989 would produce about $3 billion in additional outlay reductions in discretionary appropriations from the 1989 baseline and $0.4 billion in additional revenues resulting from further increases in Internal Revenue Service enforcement resources. But even with these further savings, another $32 billion in deficit reduction would still be required. (Asset sales of $3.5 billion, although required by the budget summit, may not be counted as savings under the terms of the Balanced Budget Reaffirmation Act.) If the Office of Management and Budget (OMB) comes up with similar estimates this summer, across-the-board cuts would be required of roughly 9 percent in defense programs and 13 percent in nondefense programs from their baseline levels.

Summary Figure 1.
Deficit Adjusted for Tax Reform Act and One-Time Savings



SOURCE: Congressional Budget Office.

These cuts could be avoided if OMB's estimate of the deficit were within $10 billion of the target--that is, less than $146 billion. While using more favorable economic assumptions could reduce the projected deficit to that level, relying on this approach to get through the 1989 budget year would make the 1990 deficit reduction task that much harder. Taking no action this year beyond that required by the budget summit would leave the 1990 deficit around $160 billion, according to CBO's current estimates. With a 1990 deficit target of $100 billion, the excess deficit would be $60 billion, almost double the amount of deficit reduction achieved in the first year of the summit.

THE SHORT-TERM ECONOMIC OUTLOOK

Just as the budget summit agreement for 1988 and 1989 was prompted by the stock market collapse of October 19, so will budgetary developments for 1988 and 1989 be driven by the economic aftermath of the crash. The drop in share values wiped out hundreds of billions of dollars of consumer wealth and contributed to a drop in consumption. Excluding automobiles, real personal consumption fell at a 1 percent rate in the fourth quarter of 1987--the first decline since 1981.

As a result of the weakness in consumption, business piled up unsold inventories throughout 1987, but especially in the fourth quarter. CBO expects that the attempt to reduce inventory accumulation will act as a drag on the economy in early 1988. Real federal purchases of goods and services are also expected to fall, reflecting successive years of budgetary stringency.

Some brighter signs, however, suggest that the economy will avoid a recession. Real net exports have started to improve as a result of three years of dollar depreciation, and net exports are likely to be the major engine of growth in 1988 and 1989. Because the saving rate has already increased substantially, further declines in consumption are not anticipated.

The financial crisis was the impetus for a major shift in monetary policy. From the Louvre accord in February 1987 through October, the Federal Reserve's stated aims were to support the value of the

dollar and to dampen inflationary expectations. In pursuing these aims, the Federal Reserve was forced to keep up interest rates. After the crash, however, it permitted interest rates to fall even at the cost of a depreciating dollar. This situation is likely to create inflationary pressures by the end of 1988 that will cause the central bank to shift back to a less accommodating stance.

CBO's short-run economic forecast for 1988 and 1989 is shown in Summary Table 2. In addition to the monetary policy just described, the forecast assumes that federal fiscal policies are consistent with CBO's baseline revenue and outlay projections. The immediate outlook for the economy is substantially weaker than CBO expected in August. With a sluggish first half, real gross national product (GNP) is expected to grow by only 1.8 percent in 1988 (measured from fourth quarter to fourth quarter). The unemployment rate will average 6.2 percent for 1988 as a whole, the same as the previous year. In 1989,

SUMMARY TABLE 2. CBO FORECAST FOR 1988 AND 1989
(By calendar year)

	Actual 1987	Forecast 1988	Forecast 1989
Fourth Quarter to Fourth Quarter (Percent change)			
Real Gross National Product	3.8	1.8	2.6
GNP Deflator	3.3	3.9	4.2
Consumer Price Index (CPI-W)	4.5	4.9	4.8
Calendar-Year Average (Percent)			
Three-Month Treasury Bill Rate	5.8	6.2	6.7
Ten-Year Government Note Rate	8.4	9.3	9.5
Civilian Unemployment Rate	6.2	6.2	6.1

SOURCE: Congressional Budget Office.

growth is expected to return to a 2.6 percent rate, roughly the same as that assumed in CBO's summer projections and only slightly lower than in the last three years. Consumer price inflation, which totaled 4.5 percent in 1987, is expected to reach 4.9 percent in 1988 and 4.8 percent in 1989. The GNP deflator is expected to increase more slowly than the Consumer Price Index, since the step-up in inflation is driven mainly by import prices, which do not add to the GNP deflator.

As a result of the slow real growth and the Federal Reserve's accommodative stance in the first half of 1988, there will be little immediate pressure on interest rates. Later in the year, the three-month Treasury bill rate should begin to rise in response to the higher inflation rate. For the year as a whole, CBO projects that the bill rate will average 6.2 percent. Ten-year government note yields will rise even more sharply, averaging 9.3 percent for the year, as they incorporate expectations of still greater inflation in the future resulting from the accommodative monetary policy. In 1989, the resumption of growth and the Federal Reserve's anticipated tightening will cause short-term real interest rates to continue rising. Long-term rates in 1989, however, are projected to be relatively flat.

Like all economic forecasts, this one is very uncertain. For one thing, it depends on the success of the Federal Reserve in supplying the economy with enough credit to avoid a recession, without reigniting inflation or undermining the dollar. It also assumes that the long-awaited improvement in net exports has finally arrived and will accelerate in 1988. On the other hand, the economy could prove stronger than in this forecast if CBO has overestimated the extent of consumer retrenchment.

Another way of addressing the uncertainty of the forecast is to look at the historical record. For fiscal years 1978 through 1987, two-thirds of CBO's forecasts of nominal GNP for the budget year were within 2.8 percent of the actual outcome. Because 10 years is a very small sample on which to base a conclusion, however, CBO has also developed an uncertainty measure using a statistical approach. This measure produces a somewhat higher margin of uncertainty--4.2 percent of GNP. Based on this second measure of uncertainty, there is a two-thirds chance that the 1989 deficit will fall within $49 billion of the level projected by CBO.

LONGER-RUN BASELINE PROJECTIONS

Beyond 1989, CBO's economic assumptions are not a forecast of future conditions but are projections based on historical trends. The projections do not include business cycles. They assume that the economy's long-term growth depends largely on the growth of the labor force and that output per worker will grow at about the same rate it has in recent years. CBO's five-year economic projections and the corresponding baseline budget projections are presented in Summary Table 3.

In the projections, real GNP grows at an average annual rate of about 2.7 percent from 1989 to 1993, while the civilian unemployment rate falls to about 5.3 percent (see Summary Figure 2). As measured by the GNP deflator, inflation stays at 4 percent, close to the postwar average. Consumer price inflation is slightly higher, however, because of further declines in the dollar and increases in import prices over the medium term. After 1989, real interest rates decline to levels consistent with their average since exchange rates began floating in 1971. Cyclical changes will presumably affect the level of activity during the projection years, but there is no way of predicting when they will occur or what will precipitate them. Thus, the projections should be considered as an average of a number of possible paths the economy might take.

Under these longer-run assumptions, the baseline deficit is projected to decline slowly from $176 billion in 1989 to $134 billion in 1993. The deficit shrinks because revenues are boosted by both inflation and real growth, while outlays rise only slightly faster than the rate of inflation. Compared with the size of the nation's economy, the baseline deficit falls from 3.1 percent of the gross national product in 1990 to 2.1 percent in 1993.

This report attempts to quantify for the first time the uncertainty inherent in these long-term economic and budget projections. The approach used is an extension of the analysis in CBO's report of last summer of the accuracy of budget-year estimates. The analysis suggests that there are about two chances in three that the level of real GNP in 1993 will turn out to be within 7 percent of its projected value,

SUMMARY TABLE 3. BASELINE BUDGET PROJECTIONS AND UNDERLYING ASSUMPTIONS

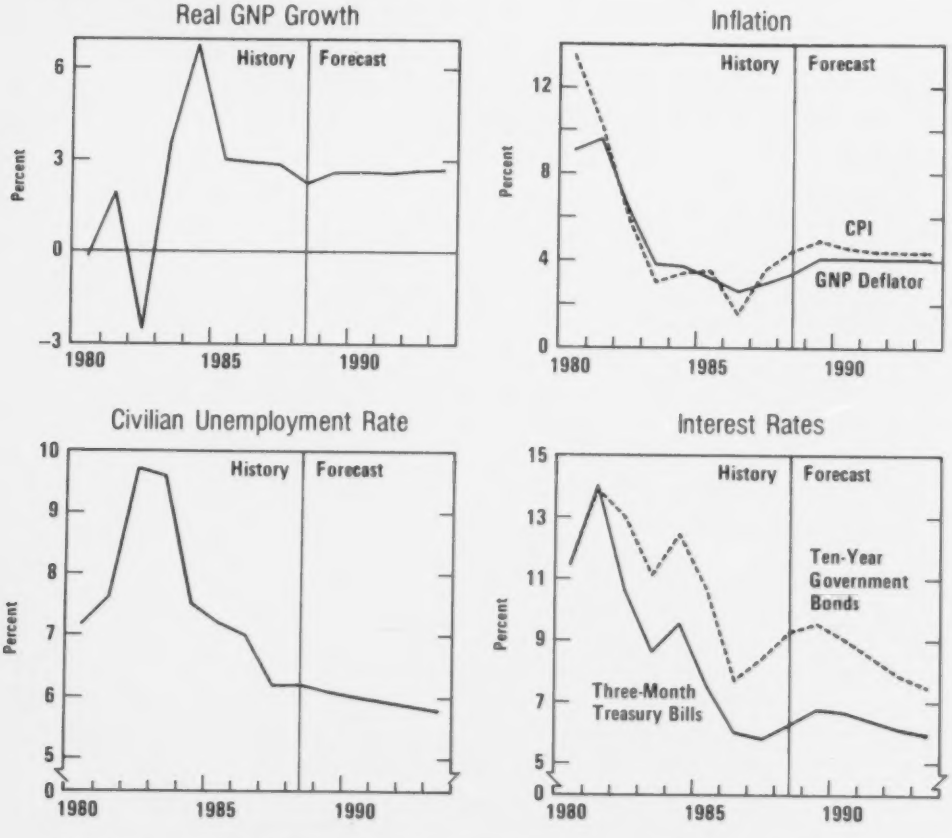
	Actual 1987	1988	1989	1990	1991	1992	1993
Budget Projections (By fiscal year, in billions of dollars) a/							
Revenues	854	897	953	1,036	1,112	1,181	1,262
Outlays	1,005	1,055	1,129	1,203	1,269	1,332	1,396
Deficit	150	157	176	167	158	151	134
Economic Assumptions (By calendar year)							
Nominal GNP Growth (percent change)	5.9	5.8	6.8	6.8	6.8	6.9	6.9
Real GNP Growth (percent change)	2.9	2.3	2.6	2.6	2.6	2.7	2.7
Implicit GNP Deflator (percent change)	3.0	3.4	4.1	4.1	4.1	4.1	4.1
CPI-W b/ (percent change)	3.6	4.5	4.9	4.6	4.4	4.4	4.4
Civilian Unemployment Rate (percent)	6.2	6.2	6.1	6.0	5.9	5.9	5.8
Three-Month Treasury Bill Rate (percent)	5.8	6.2	6.7	6.6	6.4	6.1	5.9
Ten-Year Government Note Rate (percent)	8.4	9.3	9.5	9.0	8.4	7.8	7.4

SOURCE: Congressional Budget Office.

a. The baseline estimates include Social Security, which is off-budget.

b. Consumer Price Index for urban wage earners and clerical workers.

Summary Figure 2.
Major Economic Assumptions



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

or that the average real growth rate between 1987 and 1993 will be between 1.6 percent and 3.6 percent. As a result, there is a two-in-three chance that the 1993 deficit will be within $125 billion of its projected value of $134 billion. This large degree of uncertainty illustrates the point made earlier that the longer-run projections should be viewed only as a general indicator of budgetary trends and not as a forecast of future budgets.

CHAPTER I

THE ECONOMIC OUTLOOK

Last year was the fifth year of economic expansion since the 1981-1982 recession. Growth continued unabated, however, at about the same rate as in the two preceding years. It also became more balanced as a gradual improvement in the foreign trade balance (in real terms) led to a rapid expansion of manufacturing output. Toward the end of 1987, the unemployment rate fell to a level not seen in seven years. Inflation, though higher than in 1986, remained moderate.

Last year, however, is likely to be remembered not so much for the performance of the economy as for the extraordinary turbulence in financial markets, culminating in the worldwide collapse of stock market prices in mid-October. The stock market crash and the fears of financial chaos it generated forced the Federal Reserve to ease its monetary stance and reinvigorated efforts to work out measures aimed at reducing the federal budget deficit. The events of mid-October also altered the economic landscape by suddenly wiping out hundreds of billions of dollars in consumer wealth and possibly weakening consumer and business confidence in the sustainability of the current economic expansion.

These developments increased the likelihood of an economic slowdown in early 1988. The Congressional Budget Office (CBO) sees this weakness as temporary. The economy should regain strength in the second half of 1988 and keep expanding through 1989. The unemployment rate mirrors this pattern, in CBO's forecast, rising slightly in the first half of the year but falling as growth picks up again. Inflation in consumer prices is expected to increase noticeably, however, primarily as a result of higher import prices.

The sources of demand growth in the next two years will be quite different from those earlier in the expansion, when spending by consumers and the federal government was growing rapidly while the trade sector constituted a drag on growth. In 1987, consumer demand slowed and fiscal policy turned restrictive. At the same time, the

improvement in the real trade balance began to contribute to growth. These trends in the composition of aggregate demand can be expected to prevail, and even strengthen, in the next two years.

This outlook for the economy is contingent on the success of the Federal Reserve in steering between a policy of supplying the economy with enough credit, on the one hand, and maintaining interest rates high enough to defend the dollar, on the other hand. In contrast to the assumptions about monetary policy underlying the forecast of last August, CBO now assumes that the Federal Reserve will be for some time more tolerant of a depreciating dollar, mainly to counter the short-term deflationary consequences of the stock market crash. While this posture will allow short-term interest rates to go somewhat lower than forecast last August, it is also expected to engender growing inflationary pressures, rising inflationary expectations, and higher nominal long-term rates by the end of 1988, compelling the Federal Reserve to adopt somewhat tighter monetary policy at that time. The increasing monetary restraint anticipated for 1989 should not, however, be severe enough to interrupt the expansion.

THE POLICY ENVIRONMENT

The enormous trade imbalances between the United States and its trading partners stem largely from policy decisions made in this country and abroad during the past decade. The size and persistence of these imbalances have changed the environment in which policies must be carried out. In particular, U.S. monetary policy is now more constrained by international considerations than it was before, and hence interest rates are likely to be higher than they would otherwise have been. Moreover, the growing international openness of the U.S. economy has meant a multiplication of economic forces and players, making it harder for policymakers to anticipate the economy's future.

The effect of the continued imbalances on the economy is now evident to all: the accumulated current account deficits of the past five years have already changed the United States from the world's largest net creditor to its largest net debtor. Were the deficits to continue at this level, the need to finance them while also servicing the accumulated debt would require foreigners to continue to acquire U.S.

assets at an unsustainably high rate. Foreigners, whether private investors or monetary authorities, will not be willing to increase the proportion of their assets held in dollars indefinitely, and the growth rate of U.S. debt held by foreigners will ultimately have to fall.

The reluctance of foreign private investors to accumulate dollars in 1986 and 1987 at the same pace as in the two previous years has already put downward pressure on the dollar. The fall in the dollar has tended to raise interest rates and engender inflationary expectations in the United States. This situation, in turn, contributed to the collapse of financial markets in October. To alleviate these pressures, the trade deficit must shrink. But it is unlikely to shrink fast enough in the short run to keep the dollar from falling further and interest rates from remaining high.

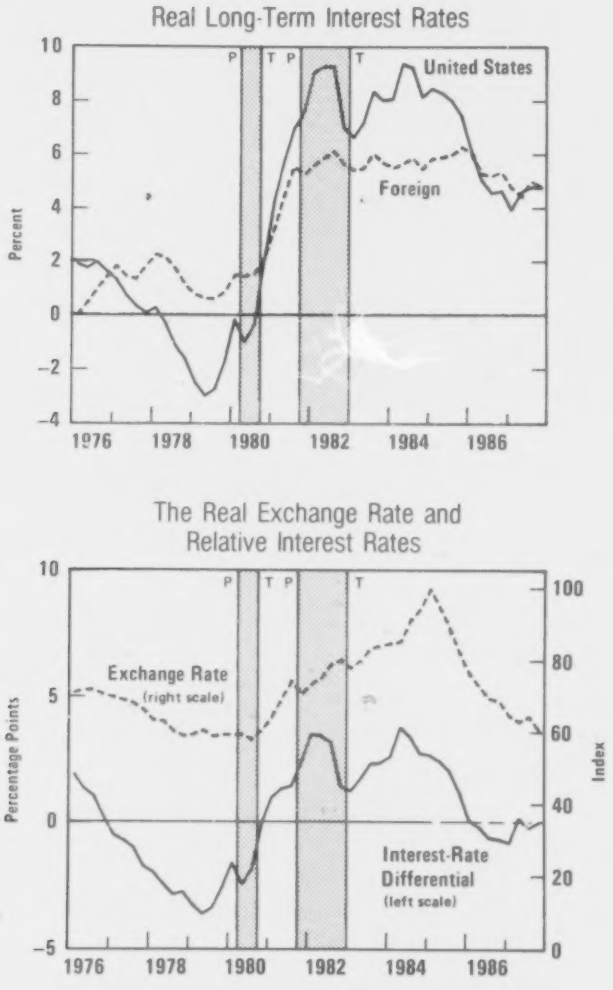
To facilitate a smooth reduction in its trade deficit, the United States is now trying to reduce its federal budget deficit while encouraging Germany and Japan to increase theirs. Monetary policies here and abroad are currently aimed at stabilizing the dollar or at least reducing the speed of its decline. It is hoped that this will prevent a reemergence of inflation in the United States and will improve prospects for growth abroad. At the same time, monetary authorities are aware that stabilizing the dollar by pushing interest rates up may cause a recession. This path is particularly difficult to negotiate given the new constraints placed on policymakers by the size of the U.S. trade deficit, growing U.S. foreign indebtedness, and the recent rapid growth of money supply in other industrial nations.

Development of the Trade Problem

U.S. policymakers today face a situation that has its roots in monetary and fiscal actions taken here and abroad during the 1980-1986 period. Late in 1979, the Federal Reserve initiated a restrictive monetary policy to reduce the rate of inflation, which had risen above 13 percent. Other countries took similar steps soon afterward, but their policies were less restrictive and were accompanied by a tightening of fiscal policy. As a consequence, U.S. real (inflation-adjusted) interest rates rose more than foreign rates in 1980 and 1981 (see Figure I-1). The

Figure I-1.

Interest Rates and the Exchange Rate



SOURCES: Congressional Budget Office; Federal Reserve Board; International Monetary Fund.

NOTE: The real exchange rate is a trade-weighted average of dollar exchange rates adjusted for consumer price inflation. Expected inflation is proxied by a two-year centered moving average of actual and projected CPI inflation. The foreign real interest rate is a GDP-weighted average of the rates of other major industrial countries. The interest-rate differential is the U.S. rate less the foreign rate.

TABLE I-1. NET SAVINGS AND INVESTMENT FLOWS AS A PERCENTAGE OF GNP (NIPA basis)

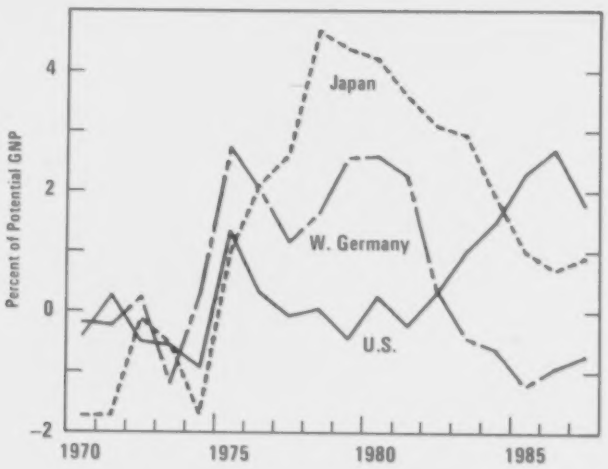
	(1) Net Private Domestic Savings	(2) State and Local Surplus	(3) Federal Deficit	(4) Net Domestic Savings Available for Domestic Investment: (1) + (2) - (3)	(5) Net Private Domestic Investment	(6) Net Domestic Savings Shortfalls (5) - (4) = Net Capital Inflows
1950-1959	7.5	-0.2	-0.1	7.8	7.5	-0.3
1960-1969	8.1	0.0	0.3	7.8	7.1	-0.7
1970-1979	8.1	0.8	1.7	7.2	6.9	-0.3
1980	6.4	1.0	2.2	5.2	4.9	-0.3
1981	6.6	1.1	2.1	5.6	5.5	-0.1
1982	5.5	1.1	4.6	2.0	2.0	0.0
1983	5.7	1.4	5.2	1.9	3.1	1.2
1984	6.8	1.7	4.5	4.0	6.6	2.6
1985	5.7	1.6	4.9	2.4	5.1	2.7
1986	5.3	1.3	4.8	1.8	5.1	3.3
1987	4.3	1.0	3.4	1.9	5.3	3.4

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

relatively high real interest rates here contributed decisively to the increase in demand for dollar-denominated assets; consequently, the dollar began to appreciate.

By the end of 1982, monetary policy had eased both here and abroad, but U.S. fiscal policy had become stimulative. Taxes were cut in several stages, and real federal spending on goods and services began to rise at a rate reminiscent of the buildup during the Vietnam War. As a result, the federal deficit rose from 2.1 percent of potential gross national product (GNP) in 1981 to 4.9 percent in 1985. Consumer spending boomed, partly because of personal income tax cuts and partly because the strong dollar made imported goods unusually attractive. The consumption boom even outstripped income growth, so that the personal saving rate fell dramatically. Investment in plant and equipment was also stimulated by changes in the tax laws. In the 1981-1985 period, these developments--the larger federal deficit, the fall in the personal saving rate, and the surge in fixed investment--were creating a net saving deficit at home, while foreign fiscal policy was becoming more restrictive (see Table I-1 and Figure I-2). Contrac-

Figure I-2.
International Comparison of Structural Deficits



SOURCES: Congressional Budget Office; Organization of Economic Cooperation and Development.

NOTE: The levels of the structural budget deficits (deficits adjusted for the budgetary effects of the business cycle) as a percent of GNP depend on the assumed size of the gap between actual and potential GNP—an uncertain and controversial measure. The change in the ratio of structural deficits to potential GNP from year to year is less sensitive to assumptions about the level of potential output, and is a more useful gauge of discretionary fiscal policy. All data, including that for the United States, were obtained from published and unpublished OECD sources, and include all levels of government on a National Accounts basis.

tionary foreign fiscalpolicies caused investment to slacken abroad, freeing additional foreign private savings for investment in U.S. financial assets. Real long-term interest rates in the United States continued to be higher than those overseas, capital continued to flow into dollar-denominated assets, and the dollar continued to appreciate.1/

The substantial increase in the value of the dollar in the early 1980s severely weakened the competitiveness of U.S. exporters and import-competing industries. Export growth stagnated and imports surged. Industries producing tradable goods suffered in 1984 even as the rest of the economy was experiencing rapid growth. The current account worsened rapidly, falling from a surplus in 1981 to a $107 billion deficit in 1984.

1. The developing-nation debt crisis, which started in 1982, also strengthened the dollar as capital flowed out of those countries to the safe haven of dollar-denominated assets.

Late in 1984, U.S. monetary policy was easing and the differential between foreign and U.S. real long-term interest rates was declining. Also, as the U.S. current account continued to register larger deficits, it was becoming ever clearer that the resulting pace of accumulation of net claims against the United States (measured in inflation-adjusted, foreign-currency terms) was unsustainable. Had it continued, it would have required dollar-denominated assets to make up an ever-increasing share of foreign private portfolios. Nevertheless, demand for the dollar remained strong for a number of months, even after the real interest-rate differential had begun to decline. Finally, in early 1985, the dollar started to fall.2/

Policymakers welcomed the initial fall in the dollar, since the growing trade deficits were encouraging protectionist sentiment in the United States. The Plaza Accord of September 22, 1985, was a concerted effort by the United States and its major trading partners to depress the value of the dollar. In 1986, however, the speed of the decline in the dollar began to raise concerns about inflation in the United States and the abrupt loss of markets by foreign exporters. Instead of selling, foreign central bankers began to buy dollars to keep the dollar from falling precipitously.

By the end of 1986, the dollar had fallen an average of 33 percent against the currencies of 10 major U.S. trading partners from its peak in early 1985; both the real and the nominal trade deficits were continuing to increase; and the rate of growth of private demand for dollar assets had fallen off. Fears of a dollar collapse began to haunt financial markets. The stage was set for the turbulent events of 1987 that created the environment in which policymakers must operate today.

The Dollar, Monetary Policy, and Financial Markets in 1987

Meeting in the Louvre in February 1987, financial representatives of the major industrial countries agreed that further substantial shifts in exchange rates in the short run would hamper efforts to increase economic growth and promote adjustment within their own countries.

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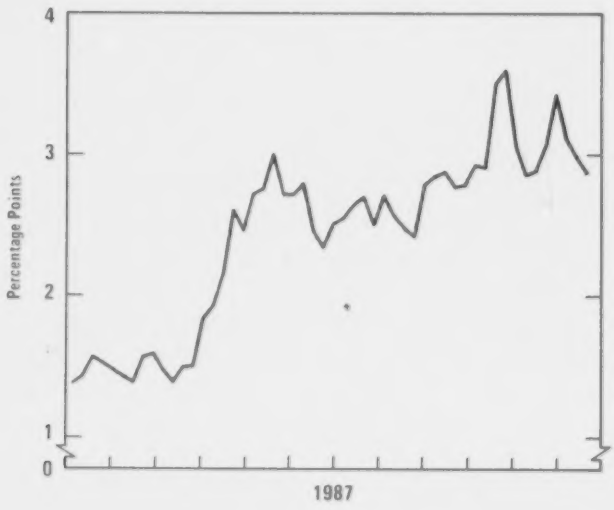
2. Weaknesses in the U.S. financial system (failures of thrift institutions, and problem loans in energy and agriculture) may have helped to erode confidence in the dollar.

Figure I-3.
The Spread Between Long-Term and Short-Term Interest Rates



SOURCES: Congressional Budget Office; Federal Reserve Board.

NOTE: The spread is the difference between the ten-year constant-maturity Treasury bond yield and the three-month Treasury bill rate on a bond equivalent yield basis.

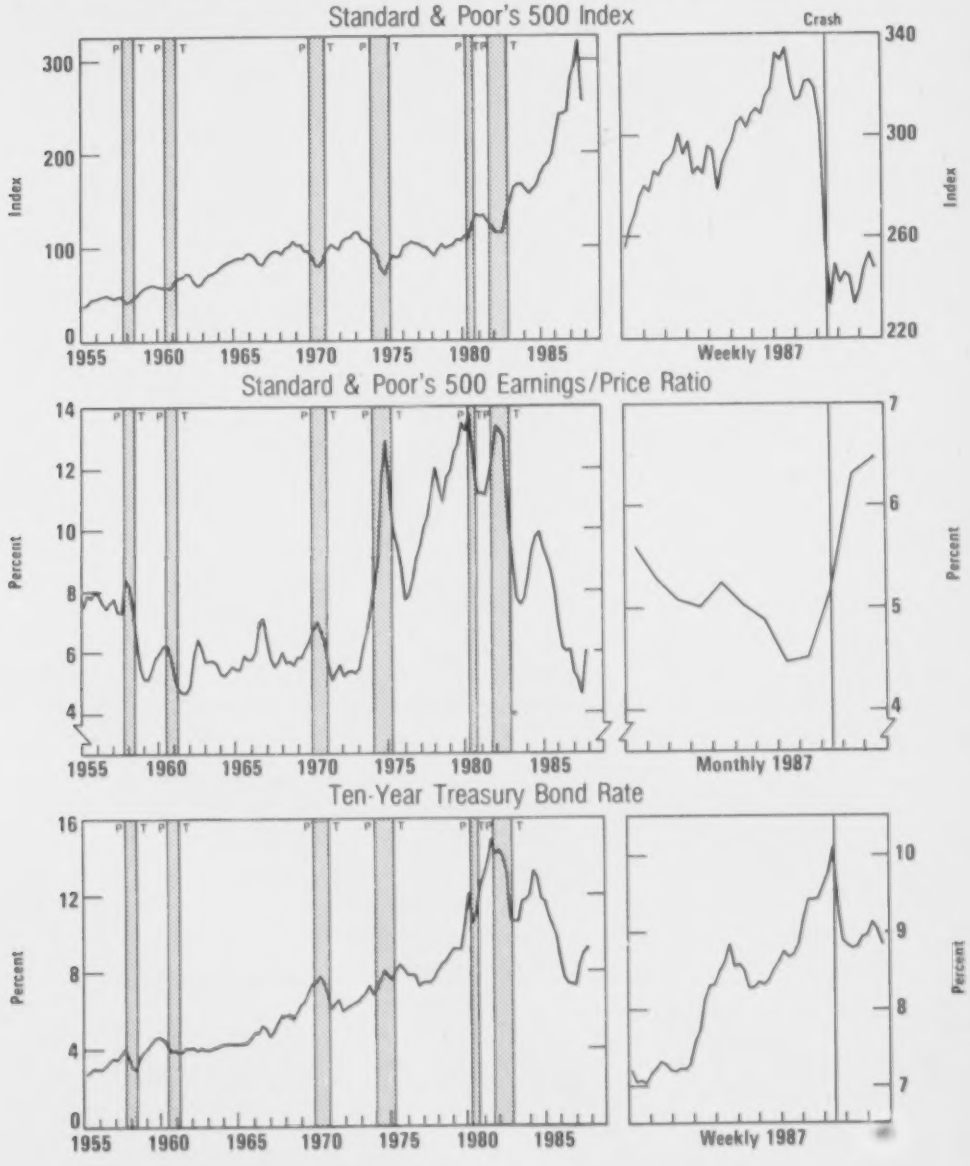
Participants in the Louvre meeting agreed that the dollar should be stabilized for a period to determine the responsiveness of the U.S. trade deficit to the devaluation that had already taken place, and that their currencies were then "within ranges broadly consistent with underlying economic fundamentals."3/

But despite exceptionally high levels of dollar purchases by the monetary authorities of major countries, the dollar dropped sharply in April and May. This drop was accompanied by a large increase in interest rates in the United States, as an apparent increase in inflationary expectations drove up bond yields and the Federal Reserve Board tightened monetary policy (see Figures I-3 and I-4).4/ Interest rates in foreign countries eased. The resulting spread in domestic and foreign interest rates partially reversed the decline of the dollar, with little additional direct intervention in currency markets.

3. Organization for Economic Cooperation and Development, *Economic Outlook* (June 1987), p. 59.

4. The reported annual rates of change of the Consumer Price Index and the Producer Price Index for the first three months of 1987 were 5.7 percent and 6.2 percent. This was a sharp increase from the rates prevailing in late 1986.

Figure I-4.
Financial Market Indicators



SOURCES: Congressional Budget Office; Standard & Poor's Corporation; Federal Reserve Board.

The stock market did not fall in response to the April increase in interest rates. Instead, it continued to rise rapidly during the summer, widening the discrepancy between stock and bond returns. By late August, the Dow Jones Industrial Average and the Standard & Poor's 500 Index had reached record highs; the price-to-book value ratio for the Standard & Poor's 400 Industrials was over 2.3, high by historical standards; and the earnings-price ratio of the Standard & Poor's 500 had fallen to 4.3 percent (see Figure I-4).

During the summer, though, foreign monetary authorities, particularly in Germany and Japan, became more concerned about the possibility of inflation. To slow the growth in their money supplies that was associated with their intervention in support of the dollar, a number of foreign industrial countries allowed their interest rates to rise.5/ The Federal Reserve Board was then forced to allow U.S. interest rates to rise to keep the dollar from falling.

The stock market weakened in response to the run-up in rates--in contrast to its behavior when interest rates increased in April. The Dow Jones Industrial Average fell 126 points from its mid-August peak through the end of September.

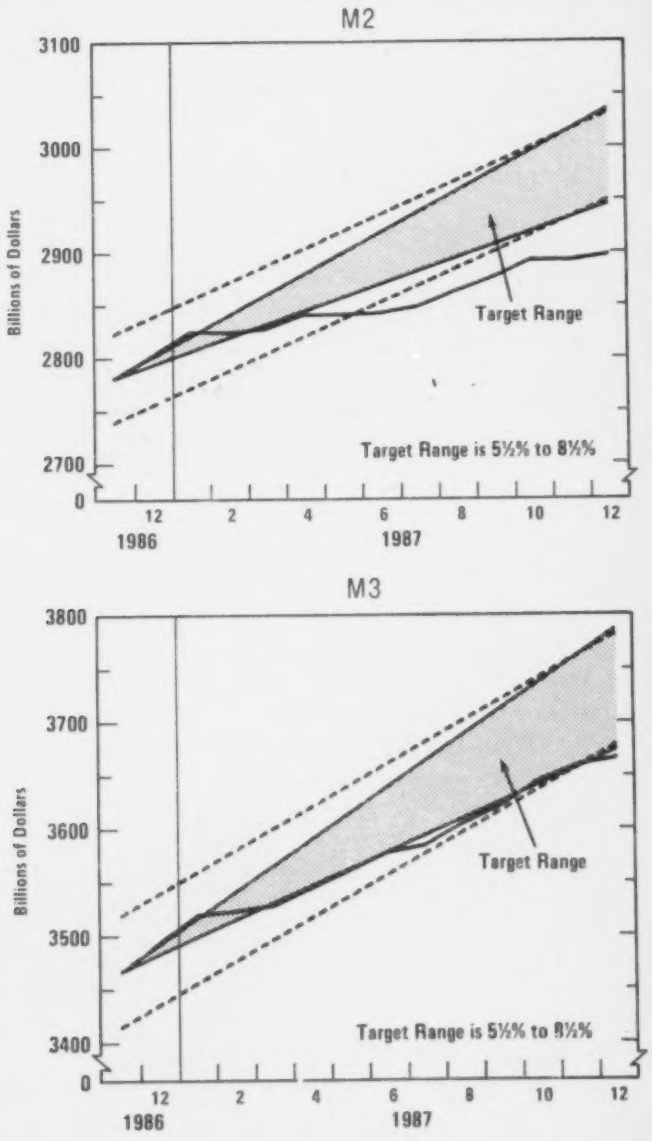
The extent of Federal Reserve tightening in the first three quarters of 1987 is now clear. The broader monetary aggregates, which had entered the year growing above their announced target ranges, slowed markedly as the year progressed. By the end of the third quarter, M2 was well below its target range and M3 was also expanding slowly (see Figure I-5). Also, the spread between the federal funds rate and the discount rate widened after February as the Federal Reserve sought to soften the drop in the dollar and ease fears of renewed inflation. To underscore this move, the Federal Reserve raised the discount rate half a percentage point in early September.

After a brief period of stability, another run-up in rates in early October contributed to a substantial decline in the stock market during the week that preceded the October 19 crash. That weekend, Treasury Secretary Baker issued a statement that West Germany had

5. Buying dollars from the private sector in exchange for domestic currencies tends to increase the money supplies of foreign countries.

Figure I-5.

Money Growth and Targets in 1987



SOURCES: Congressional Budget Office; Federal Reserve Board.

NOTE: Dotted lines refer to growth bands that the Federal Reserve Board considers consistent with its targets.

violated the spirit of the international agreement by maintaining high interest rates. His remarks carried the implication that the United States would no longer allow its interest rates to follow foreign rates upward. His statement also created the impression that conflict between inflation-fighting and recession-fighting goals had spelled the end of coordinated international efforts to support the dollar.

The stock market then dropped 26 percent--more than 600 points on the Dow Jones average--in two trading days. Contributing factors were the early October rise in interest rates, bad news on the rate of improvement in the trade deficit, and concern over the future course of the dollar. Institutional factors, such as program trading and portfolio insurance, are thought to have contributed to the steepness of the drop.6/ In terms of the Wilshire 5000 Index, the loss in value was approximately $900 billion. Foreign stock markets collapsed at the same time.

Interest rates dropped sharply in the wake of the stock market collapse as foreign monetary authorities quickly relaxed their policies, and the Federal Reserve set aside its policy of supporting the dollar and turned instead to add liquidity to the financial markets.7/ Short-term Treasury bill rates dropped, and long-term Treasury bond yields also fell as expectations of future economic growth and inflation were revised downward after the crash. In response, the dollar fell 11 percent against the currencies of its major trading partners over the next several weeks.

The stock market crash was the most important economic event of 1987, not just because of the dramatic size of the sell-off but also because it caused a fundamental restructuring of policy. It reordered economic priorities both in the United States and abroad, and increased the level of uncertainty for consumers, producers, and government policymakers alike.

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6. See *Report of the Presidential Task Force on Market Mechanisms* (January 1988).

7. Reserves were pumped into the system to augment a credit supply that threatened to become strained during the crash. The announced willingness of the Federal Reserve to provide additional liquidity, as stated by Chairman Greenspan, also played a role in calming financial markets.

Current Monetary Policy and the Outlook for the Dollar

Prospects for weaker growth reduced inflationary expectations and long-term interest rates early in 1988. If, as expected by CBO, the period of economic weakness is brief, inflation is likely to increase and the dollar again come under pressure as the economy strengthens later in the year. This will put monetary authorities here and abroad in a difficult situation. On the one hand, U.S. monetary policy will have to be tight enough to prevent both a resurgence of inflationary expectations and further steep declines in the dollar. On the other hand, given the potentially deflationary effects of the stock market crash and the continuation of the fiscal restraint that began in 1987, overly tight monetary policy could cause a recession. The Federal Reserve would find its task easier in the short run if foreign monetary authorities continued to loosen their monetary policies, but many countries already have experienced rapid real monetary growth and are reluctant to risk the potentially inflationary consequences of further monetary stimulation.

Given these constraints, CBO assumes that monetary policy will be slightly accommodative through 1988, allowing only moderate increases in short-term interest rates as a reflection of higher inflation. Long-term rates, however, are likely to rise this year as they incorporate higher reported inflation and increased inflationary expectations resulting from the accommodative monetary policy. By the end of 1988, the major deflationary effects of the crash should have passed, and CBO assumes that in 1989 monetary policy will become somewhat less accommodative because of rising inflation and inflationary expectations. Foreign monetary policies are assumed to become somewhat less accommodative after the first quarter of 1988 because of the need to counter high rates of money supply growth associated with intervention in support of the dollar. The foregoing monetary policy assumptions are speculative, of course, but they appear reasonable given the constraints the monetary authorities are likely to face.

The dollar is expected to weaken in 1988 and 1989 as high, though shrinking, U.S. current account deficits (in nominal terms) cause investors' confidence in the dollar to remain weak. Furthermore, foreign central bankers, fearful of inflation, will be unable to continue intervening in the currency exchange markets at recent rates. As a

result, CBO expects the dollar to decline by about 10 percent against the major key currencies between early 1988 and the end of 1989, and to continue to depreciate over the projection horizon.

The turbulent events of 1987 were global in both their causes and effects. They demonstrated the openness of the U.S. economy, and the degree to which conditions in the United States are influenced not only by domestic economic policy but by foreign fiscal, monetary, and exchange rate policies as well as by foreign private investors operating in global financial markets. The result is increased uncertainty, both here and abroad, as investors and consumers around the world react to the developments of 1987. It has become more difficult now than at any time in the recent past to foresee fundamental economic trends, the responses of policymakers to those trends, and the outcomes of the policies themselves.

FISCAL POLICY

In contrast to the fiscal policies of a number of other major countries, U.S. fiscal policy moved toward restraint in 1987, following several years of stimulus. With the enactment of the tax and spending policies embodied in the late 1987 budget agreement between the Congress and the Administration, the outlook for domestic fiscal policy is for continued, but mild, restraint. This course may dampen economic growth somewhat, but ultimately it should help to improve the U.S. trade balance--especially if other countries pursue more stimulative fiscal policies--and free additional savings for productive uses.

The Baseline Forecast

The federal budget deficit declined from $221 billion in 1986 to $150 billion in 1987, a record drop. More than a third of this decline, however, reflected temporary budgetary effects of the Tax Reform Act of 1986 and other special factors that, as shown in Summary Table 1, shifted some of the deficit from 1987 into other years, especially 1988 and 1989.8/ Given the economic outlook described in this report and

8. Despite the large decline in the federal deficit, the net national rate of saving did not increase in 1987 because nonfederal saving decreased relative to GNP (see Table I-1). Consequently, U.S. demand for financing from abroad did not diminish.

the budget policies now in place, CBO estimates federal deficits of $157 billion in 1988 and $176 billion in 1989. Thereafter, the federal deficit is projected to decline gradually to a level of $134 billion by 1993 (based on CBO's medium-term economic assumptions and a continuation of current budget policies). The publicly held federal debt is projected to rise from 43.0 percent of GNP in 1987 to 44.7 percent in 1990, then fall to 43.4 percent by 1993.

The CBO baseline budget projections reflect the deficit reductions enacted after the November budget agreement between the Administration and the Congress, which amount to $34 billion in 1988 and $36 billion in 1989, according to CBO estimates. These budget savings include $8 billion of loan prepayments in 1988 along with revenue increases of $11 billion in 1988 and $16 billion in 1989. Additional deficit reductions in 1989, however, are contemplated under the November agreement, including $3.5 billion of asset sales. But these may not be sufficient to avoid sequestration next year under the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (Public Law 100-119), which alters the Balanced Budget Act of 1985. Among other changes, the Balanced Budget Reaffirmation Act of 1987 extends the target year for a balanced budget to 1993. It also enables sequestration to be avoided in 1989 if the estimated 1989 federal deficit does not exceed $146 billion, or if action is taken to reduce the 1989 deficit by at least $36 billion after January 1, 1988.9/

The Standardized-Employment Deficit

The path of discretionary fiscal policy is clearer when the baseline budget projections are adjusted for the budgetary effects of the business cycle. Slower economic growth automatically increases the deficit by reducing revenues and by increasing outlays for transfer programs such as Unemployment Insurance. These automatic deficit increases do not indicate discretionary policy actions.

A commonly used gauge of discretionary fiscal policy is the standardized-employment, or structural, deficit--a calculation that excludes the cyclical component of the deficit. According to this mea-

9. Chapter II discusses both the Reaffirmation Act of 1987 and the summit agreement between the Administration and the Congress, as well as CBO's baseline budget projections.

TABLE I-2. BASELINE STANDARDIZED-EMPLOYMENT DEFICIT
(By fiscal year, on a budget basis)

	Actual							
	1986	1987	1988	1989	1990	1991	1992	1993
				In Billions of Dollars				
Revenues	793	880	921	979	1,060	1,132	1,197	1,272
Outlays	980	999	1,051	1,125	1,199	1,266	1,329	1,393
Deficit	187	118	130	146	140	133	131	120
				As a Percentage of Potential GNP				
Revenues	18.6	19.6	19.4	19.3	19.6	19.7	19.5	19.5
Outlays	22.9	22.2	22.1	22.2	22.2	22.0	21.7	21.3
Deficit	4.4	2.6	2.7	2.9	2.6	2.3	2.1	1.8

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

NOTE: This measure of the deficit substantially overstates the degree of restrictiveness in fiscal year 1987, and understates the restraint between 1987 and 1989. See text.

sure, presented in Table I-2 and Figure I-6, fiscal policy was quite restrictive last year as the structural component of the deficit declined from 4.4 percent of potential output in 1986 to 2.6 percent in 1987. The same data suggest that for the next two years fiscal policy is slightly stimulative, since the standardized-employment deficit rises relative to potential output. After 1989, the outlook is for persistent but gradual restraint through 1993.

The slightly stimulative appearance of fiscal policy between 1987 and 1989 is misleading, however. It reflects the nonrecurring effects of tax reform and other special factors, which alter the measured change in fiscal policy but may have little impact on aggregate demand and employment. In particular, the 1987 deficit was lowered substantially by asset sales, by the shifting of certain outlays by a few days into 1988, by the retroactive repeal of the investment tax credit, and by a nonrecurring bulge in capital gains tax revenues as gains were realized before the rate was increased on January 1, 1987. When outlays and revenues are adjusted for such factors, the standardized-employment deficit clearly declines between 1987 and 1989, indicating fiscal restraint during the forecast period.10/ Moreover, federal purchases of goods and services decline relative to potential output, and relative

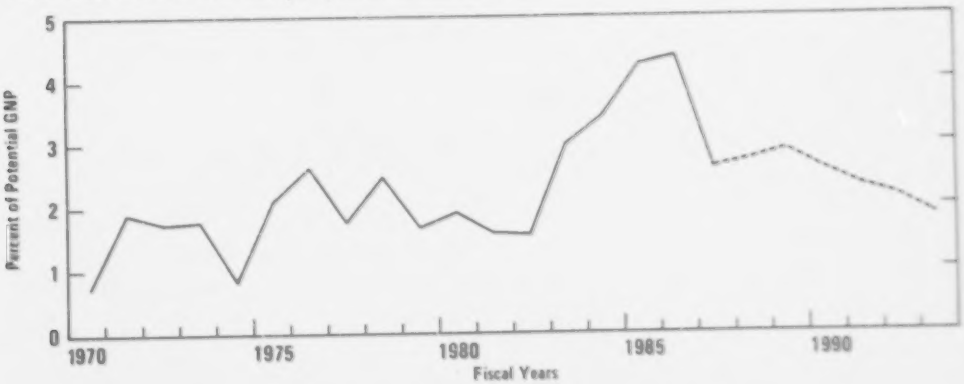
10. After removing the nonrecurring effects of tax reform, revenues rise relative to potential output since personal tax cuts are more than offset by corporate tax increases, the 1988 increase in Social Security tax rates, and the revenue-raising provisions of the November summit agreement.

to transfer payments. This change in the composition of spending makes the budget outlook more restrictive, because the impact of purchases on aggregate demand generally is thought to be greater than that of the transfer payments.

The mildly depressing effect of current fiscal policy restraint on output and employment can be lessened somewhat if major U.S. trading partners put into place fiscal measures that increase growth rates in the rest of the world and consequently the demand for U.S. exports. At the same time, U.S. real trade balances with those countries would improve as their currencies appreciate, making this country's exports relatively less expensive and its imports from abroad relatively more expensive.

The outlook for foreign fiscal policy during 1988 and 1989 is uncertain, although recent pronouncements suggest some additional easing may occur. By themselves, however, foreign efforts are not likely to contribute much to a reduction of the U.S. trade deficit.

Figure I-6.
The Standardized-Employment Deficit



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

NOTE: This measure of the deficit substantially overstates the degree of restrictiveness in fiscal year 1987 and understates the restraint between fiscal years 1987 and 1989.

THE STATE OF THE ECONOMY

The 2.9 percent growth of real output in 1987 was about the same as that of the previous two years, but growth increased during the year and the unemployment rate fell sharply. In contrast to 1986, real net exports stimulated output growth, and the growth was accompanied by a rapid accumulation of inventories. Consumption may have been weakened temporarily by the stock market crash; if so, the combination of large inventories and slower consumption growth should lead to a moderate inventory correction in 1988.

The rate of inflation increased last year, but the increase appeared to represent largely a turnaround in energy prices and not an increase in the underlying rate of inflation. This year, however, consumer price inflation will probably increase even if energy prices fall slightly. The increase will result from an anticipated acceleration in import prices, emerging constraints on capacity in some industries, and tightening markets for raw materials.

The Composition of Demand

The growth in real final sales (total demand excluding inventory change) slowed from 2.8 percent in 1986 to 2.1 percent last year. Underlying this change was a dramatic shift in the composition of demand: real net exports rose while the growth of personal consumption, construction, and government expenditures slowed. Net export gains alone accounted for 0.4 of a percentage point of the growth in real final sales in 1987, unlike 1986 when a decline in real net exports weakened final sales growth by 0.9 of a percentage point. CBO anticipates that growth in real final sales in 1988 will be driven even more by net exports, as growth in personal consumption and construction continues to be slow and federal purchases decline.

Consumption. Consumer spending, which was relatively strong from 1983 to early 1986, has been growing slowly since then and is likely to continue to grow slowly through the forecast period.

Consumer spending grew 1.8 percent in real terms in 1987. This was less than half the pace of the four preceding years, but it still exceeded the growth of disposable income in 1987. As a result, in a

continuation of a six-year trend, the personal saving rate fell. This downward trend in the saving rate is likely to be reversed in 1988 as consumers face the need to service a relatively high level of debt, coupled with a reduction in household wealth as a result of the stock market crash. The recent and projected decline in the value of the dollar will cause faster growth in consumer prices, and personal income is not expected to keep pace. As a result, real personal income growth is forecast to slow slightly. Disposable income growth is expected to increase, however, because of lower taxes--the net effect of the January reduction in personal income tax rates and the increase in Social Security taxes.

The low personal saving rates of the last few years were associated with an increase in consumer debt, which has raised concern over the financial health of the household sector. Total debt of the household sector as a percentage of disposable income has risen dramatically since 1982. Though the carrying costs of the debt are not as high in relation to income as they were in the mid-1970s, the debt load makes households vulnerable to a downturn and may increase their caution in the face of a possible recession.

The stock market crash may depress consumption, particularly in the short run. The strong growth in spending relative to income in recent years has been attributed in part to the growth in the value of household wealth. The personal saving rate declined from 6.1 percent in 1984 to 4.3 percent in 1986. Over those years, household wealth increased by 18.6 percent because of gains in the stock and bond markets and in real estate. Since the growth in asset values helped them meet their savings goals, households may have been encouraged to save a lower proportion of their incomes.

The decline in the stock market after August quickly reduced the level of household wealth. Based on the Wilshire 5000 Index, the market value of common stocks held by households fell almost 30 percent, or over $500 billion, from August to December 1987.11/ Many econometric models indicate that such a loss of wealth should cause real consumption in 1988 to be about $15 billion to $25 billion less than if the stock market had remained at its August level.

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11. Bond market wealth increased after the crash, but it was still below its early 1987 peak.

A further consideration, in addition to the effect on wealth, is how consumers interpret the meaning of the stock market drop. The two most observed indexes of consumer sentiment and buying plans indicate that consumers may reduce spending to lessen their financial exposure in an uncertain future. If they do so, such pessimism about the future may be self-fulfilling.

Real consumption fell sharply in the fourth quarter of 1987. Though a large part of the drop was caused by the end of incentives for automobile sales, consumption excluding autos fell at a 1 percent annual rate--the first decline since 1981, and a highly unusual event. Thus, consumers appear to have cut back already, perhaps in part because of the effects of the October stock market crash. In light of the recent strong growth in real disposable income and a further increase anticipated this quarter because of personal tax changes, further reductions in consumption are not anticipated. The annual rate of growth of real consumption between 1987 and 1988 is expected to be only slightly below the 1.8 percent growth between 1986 and 1987.

Business Fixed Investment. Before the stock market crash, business fixed investment was improving, largely because capacity utilization had improved significantly. Investment outlays were considerably stronger in the last half of 1987 than in the previous year and a half, but investment grew by less than 1 percent for 1987 as a whole. CBO anticipates stronger growth in real fixed nonresidential investment in 1988, but the stock market crash has made the outlook less promising and more uncertain.

The near-term indicators look reasonably good (see Table I-3). New orders for nondefense capital goods, a volatile series, were much higher after the first quarter of 1987. A rise in orders portends a rise in shipments after a slight lag. Also, the industrial production index for capital goods at the end of 1987 was up more than 6 percent from a year earlier. The Federal Reserve Board's Index of Capacity Utilization rose from under 80 percent in the first quarter to 82 percent by the end of the year. Corporate profits and cash flow, while not rising strongly, have been holding at relatively high levels.

TABLE I-3. CURRENT INDICATORS OF BUSINESS FIXED INVESTMENT AND SURVEYS OF CAPITAL SPENDING PLANS FOR 1988

	1986	1987	1987 I	1987 II	1987 III	1987 IV
Current Indicators						
Real Nondefense Capital Goods Orders (Billions of 1982 dollars per month)	30.0	33.5	30.1	33.4	34.8	35.5
Manufacturers' Capital Appropriations (Billions of dollars, quarterly rate)	21.4	n.a.	21.4	32.3	30.9	n.a.
Capacity Utilization (Percent)	79.4	80.7	79.5	79.9	81.2	82.0
Corporate Economic Profits (Billions of dollars, annual rate) a/	284	305	294	297	315	316
Corporate Cash Flow (Billions of dollars, annual rate) b/	375	370	367	365	375	375
Corporate AAA Bond Rate (Percent)	9.0	9.4	8.4	9.2	9.8	10.2
Standard & Poor's 500 Stock Index (Percent change, annual rate)	26.5	21.4	72.6	21.6	40.6	-59.2

Surveys of Capital Spending Plans for 1988 (Percent increase)

	Nominal	Real
Department of Commerce c/	7.3	7.3
McGraw-Hill d/	6.2	2.0

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; McGraw-Hill, Inc.; Conference Board; Federal Reserve Board.

NOTE: n.a. = not available.

a. Economic profits are adjusted for inventory valuation and capital consumption allowances.

b. Corporate cash flow is the sum of retained earnings, capital consumption allowances at book value, and the inventory valuation adjustment.

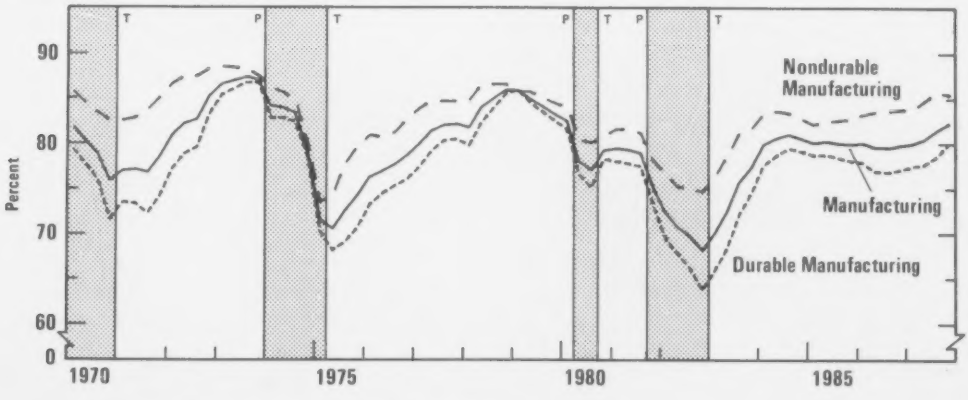
c. Conducted in October and November 1987.

d. Conducted in September and October 1987.

Several factors account for the recent upturn in investment and suggest moderate growth in 1988. First, a substantial improvement in the real trade balance during 1987 (which is expected to continue during the forecast period) helped the prospects for corporate profits in manufacturing, where profits had been severely depressed. Second, and related to these improved prospects, industrial production has been increasing at a rapid rate (in December the Federal Reserve Board index for manufacturing was up 5.3 percent from a year ago), bringing the FRB index of capacity utilization for manufacturing to its highest level since 1980 (see Figure I-7). Third, a partial recovery in oil prices reversed the decline in oil field drilling. Finally, after a pause, the important computer industry showed renewed vitality and growth during 1987.

The most important uncertainties in the outlook for business fixed investment are the effect of the stock market crash and, to a lesser extent, the large overbuilding of commercial structures that took place in the mid-1980s. For commercial building, the only question is how severe the downturn will be and when the turnaround will take place. Recent data suggest that the vacancy rate for office buildings has at least leveled off; vacancies remain very high, however, espe-

Figure I-7.
Capacity Utilization



SOURCES: Congressional Budget Office; Federal Reserve Board.

cially in suburban areas and in the South and West.12/ Another important component of business structures is construction of retail space, which is apt to be dampened by the slowdown in residential construction.

The crash in the stock market has several negative implications for investment. First, it raises the cost of equity as a source of financing. Second, it reduces the demand for final output. Third, the slower economy diminishes corporate profits and cash flow, which are alternative sources of investment financing. Fourth, the fall in the stock market raises the relative attractiveness of acquisitions and stock buy-backs relative to investment in physical capital. Fifth, the crash may have a negative effect on business confidence.

The most critical aspect of the stock market decline is its potential effect on consumption and corporate profits. If consumption falters in early 1988, and is not offset by an increase in net exports or other components of final sales, then investment will also falter after a lag. The improvement in the trade balance is a positive factor, but consumption is a much larger category of final demand.

The other potential effects of the crash on investment are more nebulous and difficult to evaluate. If the rise in the cost of equity financing has a negative effect, it may be partially offset by the reduction in interest rates. The effects of the crash on business confidence are also unlikely to be large. The market fell after having risen rapidly during the first eight months of the year, and many people, including business executives, were skeptical that such high valuations could be sustained. The shock of the fall lay largely in its suddenness; so far, at least, the market has not plunged so low as to shatter business confidence.

Surveys of business plans for capital spending show substantial strength in 1988, but these surveys may not fully reflect the stock market crash. The Commerce Department's survey, taken in October and November, found that business expected to increase capital

12. In September, the national rate for office vacancies in metropolitan areas, compiled by Coldwell Banker, stood at 20.9 percent--down slightly from a peak of 21.5 percent in March 1987, but up more than five percentage points from four years earlier. The office vacancy rate for downtown metropolitan areas, which is available over a longer period, is up more than 12 percentage points from 1980.

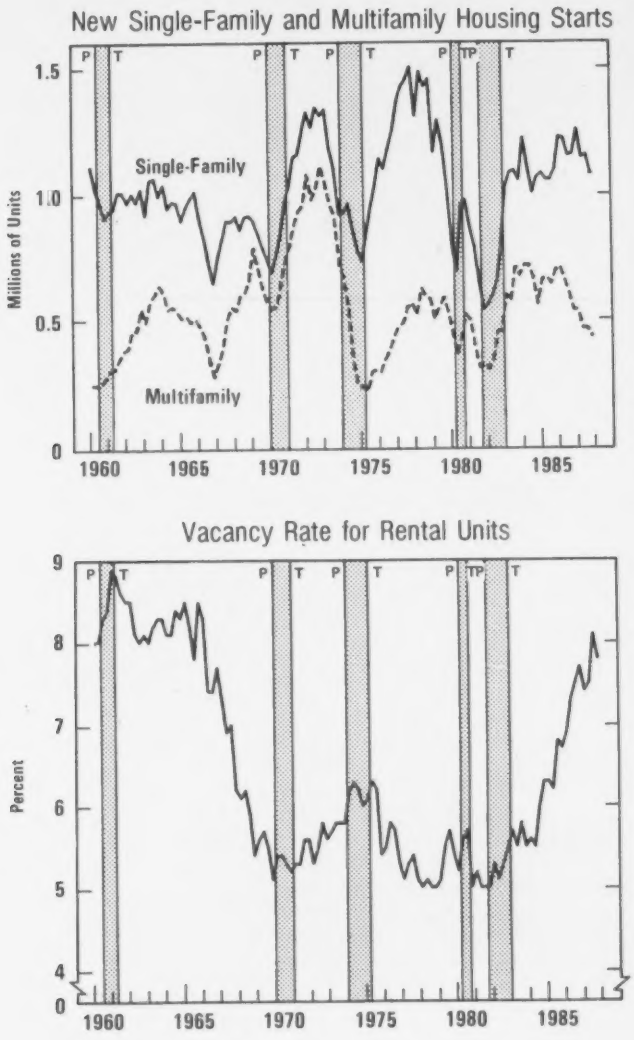
spending by 7.3 percent in 1988. Because the method used by the Commerce Department for forecasting changes in prices of plant and equipment indicates no inflation in capital goods prices in 1988, the Commerce survey implies that real capital spending would also increase 7.3 percent. Manufacturers anticipated slightly larger increases than did nonmanufacturers, apparently because of the improvement in the trade balance. The largest increases were planned in nondurable goods manufacturing industries such as paper and chemicals, where capacity utilization rates have been relatively high. A significant increase in petroleum industry investment represented a turnaround after a decline in capital spending of almost one-third in 1986 and virtually no growth in 1987. The McGraw-Hill survey, which is based on a smaller sample than the Commerce Department's and was taken before the stock market crash, showed an increase of 6.2 percent in intended capital spending in 1988. It found that business expected capital goods prices to increase by 4.2 percent, implying an increase of only 2 percent in real spending.

Housing. Since early 1986, changes in the tax treatment of rental housing have made it a significantly less attractive investment; as a result, the rate of new multifamily construction fell dramatically throughout 1986 and 1987 (see Figure I-8).

The sharply reduced rate of multifamily construction has not led to widespread shortages, however, because the demand for such housing has grown slowly. The vacancy rate for rental units is near the top of its historical range, and rents have recently been increasing at just below the underlying rate of inflation (about 4 percent). Growth in demand for this housing segment--and for housing in general--has slackened as the majority of the baby-boom population passed the age of peak household formation. In the next few years, the rate of household formation is likely to fall further--perhaps by as much as 20 percent or 25 percent. Since young households disproportionately choose multifamily housing, this sector of construction will be affected much more than construction for single families. Indeed, multifamily housing construction fell sharply in December, though the fall may have been exacerbated by temporary factors.

Construction for single families, less affected by the recent demographic and tax changes, remained quite flat most of 1987 at a rate of

Figure I-8.
Housing

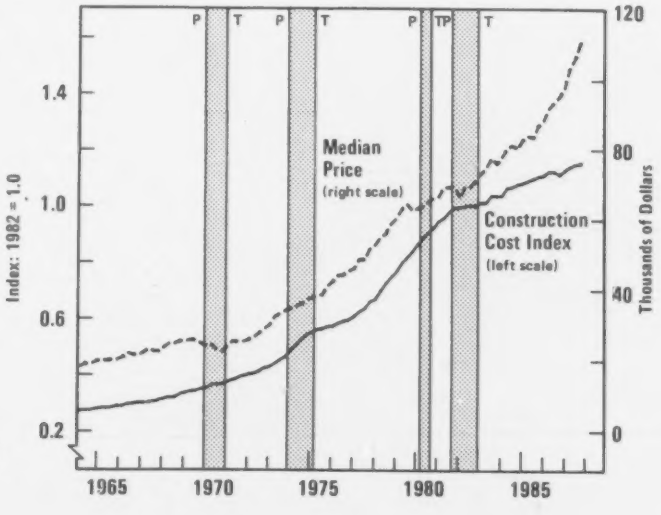


SOURCES: Congressional Budget Office; Department of Commerce, Bureau of the Census.

about 1.1 million starts; it was a little higher at the beginning of the year when interest rates were lowest, and dropped to about 1 million units in December. The reported median price of a new home jumped 16 percent during 1987. This rapid increase apparently reflected a change in the type of housing sold, however, since construction costs only increased at the recent trend rate of about 4 percent (see Figure I-9). Some analysts ascribe the shift toward more expensive homes to the reduced importance of new household formation in housing sales--so that a larger proportion of new homes are bought by people trading up. Also, the relative decline of new home construction in the Southwest means that a larger proportion of new homes are being built in the Northeast where land and construction costs are higher.

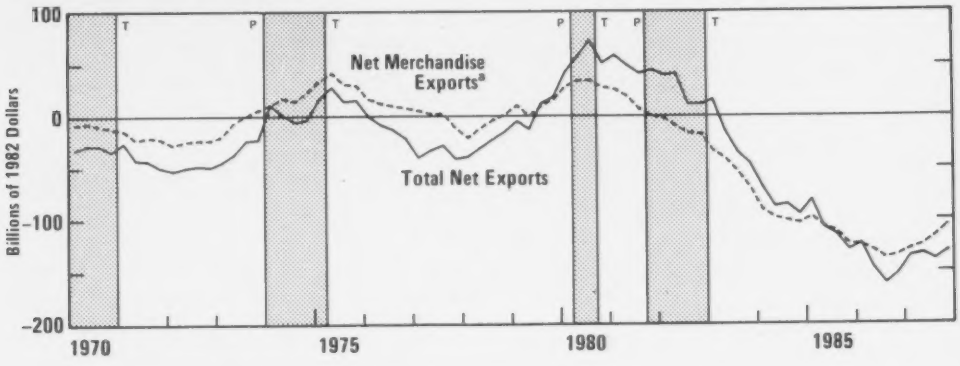
The declining rate of household formation, and the expected increase in interest rates in 1988, are likely to dampen housing starts in 1988 and 1989, even as real income continues to grow moderately. Real residential investment, which fell slightly in 1987, is expected to decline in 1988 also. If interest rates increase more rapidly than currently projected, housing activity could be cut further. Most recessions since World War II have begun with a sharp interest-rate increase and a collapse of housing starts to less than 1.2 million units overall, compared with the recent rate of 1.4 to 1.8 million.

Figure I-9.
Construction Cost Index and Median Price of New Homes



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Figure I-10.
The Real Trade Balance



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

[a] Nonpetroleum, nonagricultural merchandise.

Foreign Trade. The real trade balance made its long-awaited turnaround in 1987 (see Figure I-10). On a National Income and Product Accounts (NIPA) basis, constant dollar net exports (a measure of the difference between exports and imports adjusted for inflation) improved by $12 billion in 1987, and the rate of improvement was increasing as the year progressed. At year end, net exports were almost $21 billion greater at an annual rate than a year earlier. CBO forecasts that real net exports will continue to grow vigorously over the next two years. This forecast is based on the recent and projected depreciation of the dollar and an assumption that average economic growth among U.S. trading partners will be higher than in the United States.13/ Capacity constraints in some exporting industries could, however, limit the rate of improvement in net exports. Slower growth in domestic demand will keep capacity constraints from becoming widespread, but some of the industries that made solid export gains in 1987 are already running at high utilization rates.

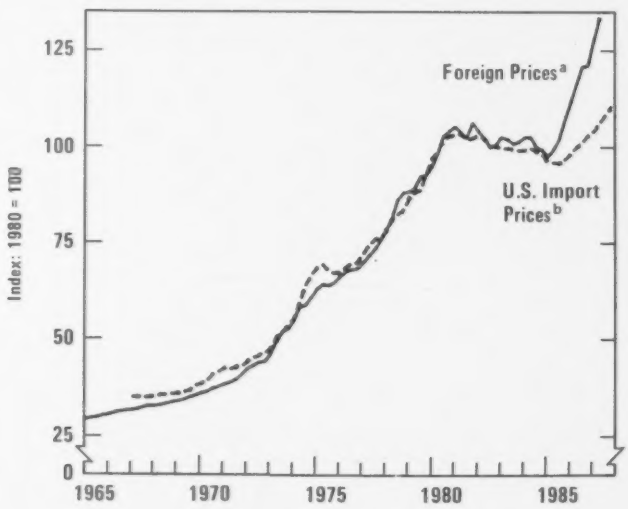
13. Average growth among the industrialized trading partners is expected to be comparable to that of the United States over the next two years; growth among the developing-country trade partners is forecast to be significantly stronger, however.

Nonagricultural, nonpetroleum import prices have increased about 14 percent since early 1985, which is not as much as one might expect given the 40 percent decline in the dollar. Real production costs may have fallen in some foreign countries because of technological advances, particularly in the newly industrializing countries of the Pacific Basin, and this lowering of costs may have offset part of the fall in the dollar.

The slower growth in foreign prices does not explain much of the small response of import prices to the dollar depreciation, however, because prices of goods imported into the United States grew at a much slower rate than foreign prices in U.S. dollar terms (see Figure I-11). The reasons for the gap are not well understood, but several contributing factors have been suggested:

- Prices of nontraded goods and services are rising faster than prices of traded goods in many foreign countries. Because such goods and services are not included in U.S. imports, U.S. import prices are not increasing as fast as foreign consumer prices.

Figure I-11.
Foreign and U.S. Import Prices



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; International Monetary Fund.

[a] Foreign consumer prices converted to U.S. dollars for 18 countries weighted by shares in U.S. nonpetroleum imports.
[b] Fixed-weight price index for nonpetroleum merchandise imports.

- Exporters to the United States have resisted raising their prices; they have preferred to cut profit margins instead to maintain their share of the U.S. market.

- Evidence shows a switch in the source of some imported goods away from countries with currencies that have appreciated the most against the dollar, toward those suppliers, such as the newly industrializing countries of the Pacific Basin, whose currencies have not experienced comparable appreciation.

Whatever the reasons for the moderate increase in import prices in the past, further durable improvement in the trade balance will probably require that import prices rise substantially relative to domestic prices. That increase may occur after a further decline in the exchange rate, or as a result of a passthrough of the exchange rate decline that has already occurred, or both.

Growth in real merchandise imports slowed sharply in 1987, as nonpetroleum merchandise imports rose at less than half the rate of the previous year. The increase in import prices since 1985 explains most of the decline in import growth. A fall in real nonpetroleum merchandise imports is anticipated over the next two years in response to a more rapid increase in import prices.

Despite a surge in oil imports in the middle of 1987 that was prompted by concerns over possibly higher prices and a shutdown of supplies from the troubled Persian Gulf area, annual real oil imports rose only 5.1 percent over 1986. Heavy imports in the third quarter combined with only modest growth in oil demand to push year-end stocks to high levels, which should depress the demand for oil imports in early 1988 while the excess stocks are being worked off. The prospects are good for only moderate growth of real petroleum imports over the forecast period.

Both real agricultural and nonagricultural merchandise exports grew strongly in 1987 because of lower agricultural prices and the cheaper dollar. Agricultural exports rose 17 percent in 1987 and nonagricultural merchandise exports by 15 percent. CBO expects that total merchandise exports will continue to grow in 1988 at almost the 1987 rate, in response to the depreciating dollar and relatively faster

income growth among U.S. trading partners. In 1989, some-what faster increases in export prices will partly offset the effects of the depreciating dollar, so that real nonagricultural export growth rates will slow down but still remain strong.

Real net services exports are expected to increase slightly in both 1988 and 1989. The services trade balance in the national income accounts consists of net factor service income (the inflow of interest and profit income earned on U.S.-owned assets located abroad, less the outflow of income earned by foreign residents on foreign-owned assets in the United States), and the net nonfactor service income from transportation, tourism, insurance, and other services. The balance on factor services has been trending down since 1982, primarily because of the increase in interest payments on the rapidly rising U.S. foreign indebtedness. The net factor income component of services trade is expected to continue to shrink over the forecast horizon because of the steadily increasing debt.14/ The nonfactor service balance, however, is expected to grow steadily. The improvement in that component of the services balance is expected to more than offset the steady deterioration in factor services throughout the forecast period.

The State and Local Sector. Real purchases by states and local governments rose 3.2 percent last year, compared with growth of 4.8 percent in 1986 (see Table I-4). Most of the slowdown resulted from a reduced rate of construction spending after the extraordinary 12.5 percent growth recorded in 1986. Further slowing in the growth of state and local purchases is expected during the forecast period, reflecting a reduction in the level of real construction expenditures.

The budgets of state and local governments (excluding social insurance trust funds) registered an estimated deficit of $6.3 billion in 1987, the first annual deficit since 1982 and the second largest on record. The outlook is for little improvement over the forecast period, despite a slower growth of purchases.15/ With only a moderate growth

14. By the end of 1987, U.S. net foreign liabilities probably exceeded $400 billion, and by the end of 1988 they are likely to be well above $500 billion.

15. Because the NIPA definition of state and local budgets (excluding social insurance trust funds) incorporates bond-financed capital spending, these budgets need not show a balance over time despite requirements by most states and localities to balance current account receipts and outlays. In fact, these budgets were in deficit from 1958 to 1971.

in trust fund surpluses, the overall surpluses of states and localities will be much less of an offset to the federal deficit than was the case during the 1984-1986 period when the surpluses (excluding trust funds) averaged $14.4 billion a year.

The Labor Market

Rapid employment growth in 1987, which was widespread among industries, caused the unemployment rate to decline to levels not seen since 1979. Nevertheless, wages continued to behave moderately, showing only slight acceleration. Productivity growth was high in manufacturing, though only mediocre in the nonfarm business sector. Unit labor costs in manufacturing actually fell, helping, along with the depreciation of the dollar, to make U.S. goods more competitive internationally.

TABLE I-4. STATE AND LOCAL GOVERNMENT PURCHASES AND BUDGET BALANCES

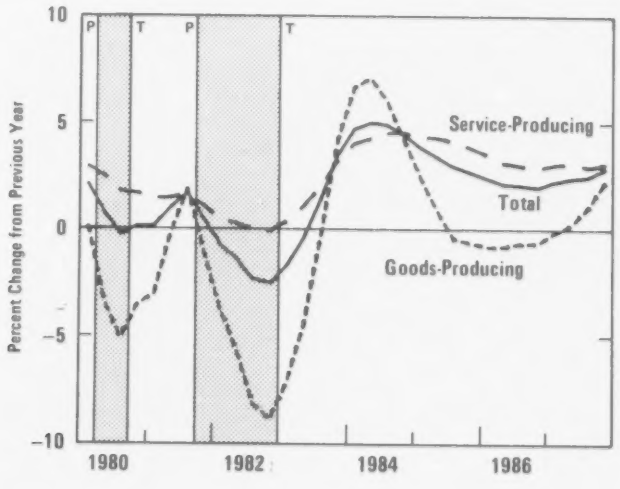
	1985	1986	1987	1987:I	1987:II	1987:III	1987:IV
In Billions of 1982 Dollars							
Total Purchases	402.7	422.1	435.6	432.3	434.1	435.4	440.5
Structures	48.4	54.4	55.3	56.7	55.3	53.7	55.6
All other	354.4	367.7	380.3	375.6	378.8	381.7	384.9
Percent Change (Annual rate)							
Total Purchases	4.1	4.8	3.2	5.0	1.7	1.2	4.8
Structures	6.6	12.5	1.7	17.2	-9.5	-11.1	14.9
All other	3.7	3.8	3.4	3.3	3.5	3.1	3.4
In Billions of Dollars							
Total Surplus	63.1	56.8	45.4	41.0	50.6	46.5	43.4
Social insurance trust funds	47.1	49.4	51.7	50.2	51.0	52.1	53.4
Other funds	16.0	7.4	-6.3	-9.1	-0.4	-5.6	-10.0

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

Employment and Unemployment. Payroll employment grew at a robust 3.0 percent rate during 1987, compared with the 1.9 percent rate in 1986 (see Figure I-12). The growth also occurred in more industries than in 1986. Seventy-three percent of the industries in the Bureau of Labor Statistics' Diffusion Index had gains in payrolls in 1987, compared with approximately 50 percent in 1986. Employment in service-producing industries continued to increase more rapidly than in the nonfarm economy as a whole, although financial services showed signs of slowing. Manufacturing payrolls, reflecting an improved competitive position internationally, began to share in the growth after a period of weakness in 1985 and 1986. In December 1987, manufacturing payrolls were up approximately 400,000 from December 1986, compared with a decrease of 162,000 during the previous 12 months.

Although the labor force continued to grow at a moderate 1.8 percent pace during 1987, employment grew more rapidly so that civilian unemployment fell from 6.7 percent in late 1986 to 5.8 percent in late 1987.

Figure I-12.
Private Nonfarm Employment



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics, establishment survey data.

An unemployment rate below 6 percent causes some economists to be concerned that labor markets have become tight enough to stimulate inflationary pressures. As was discussed in the August report, CBO does not expect significant price pressures from labor markets at current unemployment rates. Significant demographic changes since the late 1970s have reduced the intensity of wage pressures at this level of unemployment.16/ In addition, income transfer programs, such as unemployment insurance, have been tightened up considerably during the 1980s, and labor and management now appear to be much more concerned about staying competitive than they were during the 1970s.

Employment growth in the manufacturing sector, particularly in such basic industries as iron and steel and chemicals, has until recently been relatively weak compared with previous economic expansions, in part because of the severity of the recession that preceded this expansion and because of unusually intense foreign competition. For these reasons, unemployment remained relatively high in the so-called smokestack industries of the Midwest. But during 1987, employment in manufacturing rose, and labor market slack declined significantly. In fact, recent surges in demand in some manufacturing industries may even be causing slowdowns in production because of shortages in the supply of some skilled workers.

Wages, Productivity, and Unit Labor Costs. The lack of inflationary pressure in the labor market can be seen in Table I-5. Growth in compensation per hour in the nonfarm business sector has not accelerated. In fact, nominal compensation did not keep pace with the cost of living during 1987.17/ Compensation per hour deflated by the CPI fell 1.6 percent from the end of 1986 to the end of 1987.

Wage growth in 1987 remained in the 3 percent to 4 percent range of the previous three years. Wages have been rising more slowly in unionized industries, blue-collar occupations, and goods-producing industries. As previously stated, labor market slack became somewhat more evenly distributed in 1987, so these patterns of differential wage

16. Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1987), pp. 14-15.

17. Compensation per hour includes wages and salaries, supplements, employer contributions to employee benefit plans, and employer-paid payroll taxes.

increases may not persist. If labor supply problems do develop in some manufacturing industries, the pattern may even be reversed.

Productivity growth in the manufacturing sector continued to significantly outpace productivity growth in the nonfarm business

TABLE I-5. NOMINAL WAGE AND COMPENSATION RATES IN THE NONFARM BUSINESS SECTOR
(Percent change over fourth quarter of previous year)

	1984 IV	1985 IV	1986 IV	1987 IV
Compensation				
Compensation per Hour a/	4.2	4.8	3.4	2.8
Employment Cost Index b/	4.9	3.9	3.2	3.3
Union	4.3	2.6	2.1	2.8
Nonunion	5.2	4.6	3.6	3.6
Wages and Salaries				
Average Hourly Earnings Index c/	2.8	3.1	2.3	2.7
Employment Cost Index b/	4.1	4.1	3.1	3.3
Union	3.4	3.1	2.0	2.6
Nonunion	4.5	4.6	3.5	3.6
Manufacturing	4.4	3.6	3.3	3.4
Nonmanufacturing	4.0	4.5	3.0	3.4
Service-producing	4.4	4.7	3.0	3.5
Goods-producing	3.8	3.5	3.2	3.2
White-collar	4.4	4.9	3.4	3.7
Blue-collar	3.6	3.4	2.5	3.0

SOURCE: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

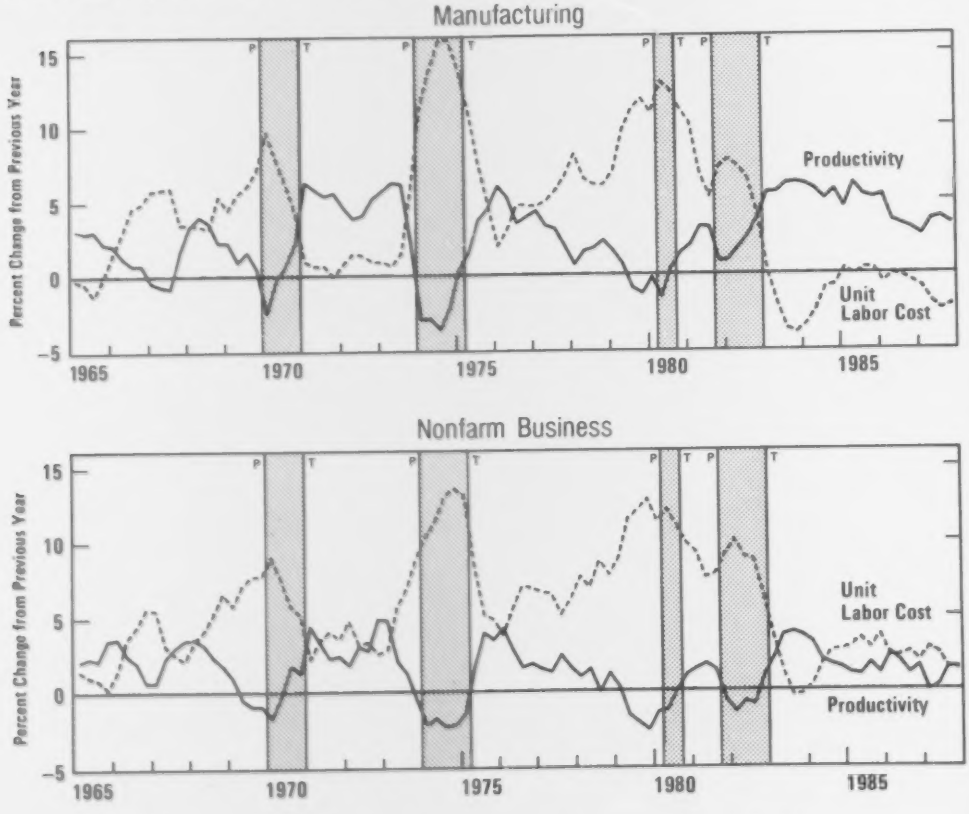
a. Quarterly data, not adjusted for overtime or for changes in the mix of industries or occupations.

b. Adjusted for overtime and for changes in the mix of industries and occupations; not seasonally adjusted.

c. Adjusted for overtime in manufacturing and for changes in the mix of industries.

sector as a whole in 1987. Productivity was up 1.4 percent in the nonfarm business economy, and 3.3 percent in manufacturing. Given the moderate pace of wage increases, this growth in productivity meant that unit labor costs rose at a relatively slow pace for the overall nonfarm business economy (see Figure I-13). In manufacturing, which is of particular relevance for international trade, unit labor costs have actually been falling; at the end of 1987, they were down 2.2 percent from a year earlier.

Figure I-13.
Productivity and Unit Labor Costs



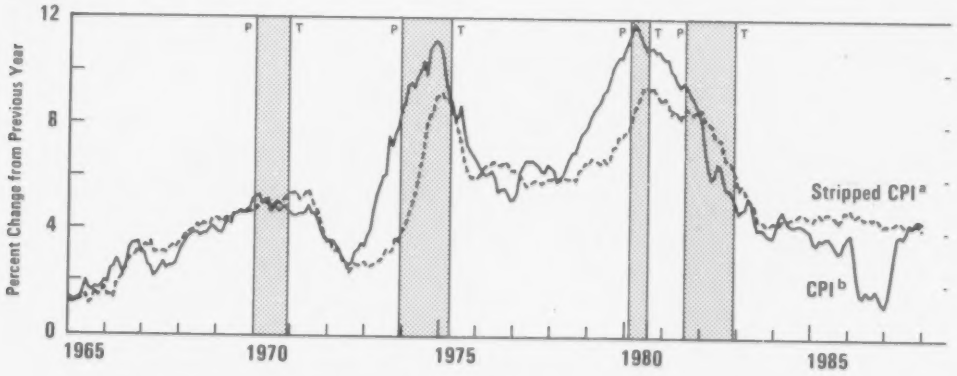
SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

Inflation

The Consumer Price Index for Urban Consumers (CPI-U) increased 4.4 percent between December 1986 and December 1987, compared with only 1.1 percent during the previous year. But the upturn was caused almost entirely by the 8.2 percent increase in energy prices. When energy and other volatile components of the price index (food and used cars) are left out, CPI-U growth has remained relatively stable at about 4½ percent since 1983 (see Figure I-14). This underlying stability can be ascribed largely to moderate wage increases, leading many forecasters to project similar moderation in consumer prices for 1988.

Though increases in food and energy prices are likely to be small, three factors suggest that the underlying inflation rate for consumer goods will rise in the near future. First, as already noted, import prices are likely to rise more quickly in 1988 than in 1987. Second, prices for crude materials and intermediate goods have increased sharply over the past year. Although these higher prices have not yet

Figure I-14.
Measures of Inflation



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

a CPI-U excluding food, energy, and used cars.
b CPI-U from January 1983 to present; before that time the series incorporates a measure of homeownership conceptually similar to that of the current CPI-U.

been reflected in finished goods, they can be expected to affect consumer prices this year. Third, rates for manufacturing capacity utilization are generally above average, and those for nondurable manufacturing (particularly chemicals, paper and products, and textiles) are at especially high levels.

Energy Prices. Energy prices rose sharply in the first quarter of 1987 and continued to increase throughout most of the year. Between December 1986 and the end of 1987, energy prices rose 8.2 percent and gasoline prices rose 18.6 percent.

In late 1987, however, crude oil inventories rose above normal levels in the United States. This increase was a factor in the 15 percent fall in the spot price of petroleum between August 1987 and January 1988. Although the war in the Persian Gulf could disrupt supply, jumps in oil prices seem less likely. The forecast assumes that the refiners' acquisition price of imported oil will increase slowly, from about $16.50 per barrel in early 1988 to about $18 by the end of 1989.

THE FORECAST AND PROJECTIONS

CBO's economic projection has two parts: a short-term forecast of economic conditions through 1989, contingent on specific policy assumptions; and a medium-term projection through 1993 based on historical trends and other assumptions about economic growth.

The Short-Run Forecast

The events described earlier in this chapter, in particular the October stock market collapse and the financial turbulence that surrounded it, have substantially changed the outlook for the economy since CBO's last report (August 1987). Consumption boomed in the third quarter, in part because of incentives for auto sales, and then dropped in the fourth quarter. To the extent that the apparent increase in stock market wealth had fueled the boom in consumption, the market's collapse may have been in part responsible for the fourth quarter's drop in nonautomobile consumption--the first since 1981. Weakness in consumption, on its own, would lower GNP forecasts. But the finan-

cial crisis also apparently led to a (possibly temporary) shift in the emphasis of monetary policy that permitted interest rates to fall, even at the cost of a sharp fall in the dollar at the end of 1987. Since the turn of the year, long-term interest rates have fallen by about 100 basis points, but the dollar has strengthened. Even though the money supply has not grown since October, interest rates are now substantially below their pre-crash levels.

Although monetary policy coordination among the industrial countries is commonly thought to be necessary to manage a smooth transition to a lower U.S. trade deficit, it may prove hard to achieve. The dollar needs to fall gradually to a level that will correct trade imbalances, permitting smooth adjustment by countries losing exports and reducing the risk of higher inflation in the United States. As mentioned earlier, however, some governments are concerned that their intervention in support of the dollar may increase their own inflation. Should they decide to allow their own interest rates to rise, the risk of a further slide in the dollar or an increase in U.S. interest rates would be heightened.

Most forecasters see these possibilities as substantially increasing the probability of a recession. Almost all postwar recessions have been preceded (and, many economists argue, precipitated) by financial restraint.18/ In addition, some forecasters note that the sharp dollar decline in late 1987 may lead to more rapid increases in consumer prices before the end of 1988, possibly causing the Federal Reserve to move further toward financial restraint. Finally, a few early indicators seem to suggest problems developing at the end of 1987 and the beginning of 1988: large inventory increases, a sharp upturn in initial unemployment claims, a sharp drop in housing starts, and the decline in real personal consumption expenditures in the last quarter of 1987.

Several factors argue, however, against a recession in 1988:

- The drop in the exchange rate over the last three years also promises to bring a large improvement in real net exports.

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18. See Otto Eckstein and Allen Sinai, "The Mechanisms of the Business Cycle of the Postwar Era," in Robert Gordon, ed., *The American Business Cycle: Continuity and Change* (Chicago: University of Chicago Press, 1986).

- Interest rates since the crash have fallen to levels that prevailed before the sharp run-up in the third quarter of 1987--perhaps before the rate spike could have serious effects on real economic activity. Long-term rate declines were particularly sharp in January, reflecting lower prospects for short-run growth and somewhat increased confidence in the short-term stability of the dollar. Some economists argue that the financial crisis actually reduced the likelihood of recession by correcting financial misalignments that might otherwise have precipitated a recession. Moreover, interest rates have fallen around the world, improving growth prospects everywhere.

- Though inflation will probably increase in 1988, the increase is likely to be lessened by the current weakness of the oil market--which may reduce the necessity for a tightening of monetary policy.

For these reasons, CBO does not forecast a recession, though the outlook for the economy is substantially weaker and riskier than that presented in the CBO summer report. Real GNP is expected to grow at a rate of 1.8 percent in 1988 and 2.6 percent in 1989 (measured from fourth quarter to fourth quarter). Inflation is expected to average about 4.9 percent as measured by the Consumer Price Index. The GNP deflator is expected to increase more slowly than the CPI, since the step-up in inflation is driven mainly by import prices. The unemployment rate, which fell sharply at the end of 1987, will rise as GNP growth slows, reaching about 6.2 percent on average in 1988 before dropping slightly in 1989.

The expected slowing of economic growth in 1988 largely reflects a sharp decline in the rate of accumulation of inventories. Inventories were built up throughout 1987, until in the fourth quarter inventory growth accounted for practically all of the increase in GNP. The return to more normal rates of accumulation will reduce output growth sharply, particularly in the first half of 1988.

Other components of domestic demand are also expected to be weaker than they were in the first three quarters of 1987. Consumers have already cut back, pushing up the personal saving rate in the fourth quarter of 1987 to a level last seen in early 1986; the growth of

consumption in 1988 and 1989 is expected to be limited by slow growth in real disposable income. Because of higher interest rates expected later in the year, together with the slowing of household formation in the next few years, it is unlikely that housing activity will rise much above current levels. Surveys done around the time of the market crash showed that businesses were planning to increase real investment on plant and equipment by 2 percent to 7 percent, but these surveys probably did not reflect the impact of the crash on spending plans. Federal purchases of goods and services have been a major direct contributor to the growth of aggregate demand over the last five years, but in 1988 real federal purchases will decline substantially.

The only significant source of growth will be the trade sector. The sluggishness of its response so far to the fall in the dollar has puzzled economists, but most forecasters agree that the recent upturn in real net exports will continue.

The short-term forecast (Table I-6) extends through the end of 1989, and is based on the following assumptions:

- *Fiscal Policy*: Federal tax and spending policies are consistent with the CBO baseline described in Chapter II, implying a moderately restrictive fiscal stance in 1988.

- *Interest Rates*: Interest rates rise in 1988 from current levels, reflecting both higher expectations of inflation (which particularly affects long rates) and also efforts to slow the decline of the dollar. The increase in rates is delayed until the second half of 1988 because of slow real growth in the first part of the year.

- *Exchange Rates*: Although the nominal trade deficit begins to improve, it remains high enough to exert downward pressure on the exchange rate. The dollar depreciates by nearly 10 percent between early 1988 and the end of 1989.

- *Oil Prices*: The refiners' acquisition price of imported oil drops from about $18.30 per barrel in the fourth quarter of 1987 to about $16.50 per barrel in the current quarter, and then returns to about $18 by the end of 1989.

CBO expects growth of both nominal and real GNP to slow substantially in 1988. The level of nominal GNP in 1988 is now expected to be about 1 percent lower than forecast last summer; this drop will be only partly made up in 1989 by a slight increase in projected inflation for that year. Interest rates, particularly long-term rates, will be substantially higher than those forecast last summer, reflecting the constraints on monetary policy that now appear much tighter than they did last summer.

Medium-Term Projections

The medium-term projections (1990-1993) are based on methods described in Appendix B. The projections reflect the assumptions that, apart from business cycles, the economy's growth depends largely on the growth of the labor force, and that--again apart from business cycles--the growth of the economy relative to the labor force will be

TABLE I-6. THE CBO FORECAST FOR 1988 AND 1989

	Actual		Forecast	
	1986	1987	1988	1989
Fourth Quarter to Fourth Quarter (Percent change)				
Nominal GNP	4.5	7.2	5.7	6.9
Real GNP	2.2	3.8	1.8	2.6
Implicit GNP Deflator	2.2	3.3	3.9	4.2
CPI-W a/	0.9	4.5	4.9	4.8
Calendar-Year Averages (Percent)				
Unemployment Rate	7.0	6.2	6.2	6.1
Three-Month Treasury Bill Rate	6.0	5.8	6.2	6.7
Ten-Year Government Bond Rate	7.7	8.4	9.3	9.5

SOURCE: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

a. Consumer Price Index for urban wage earners and clerical workers.

about what it has been in recent years. Cyclical changes will presumably affect the level of activity during the projection years, but CBO does not attempt to predict when they will occur or what will precipitate them. Thus, the medium-term outlook should be thought of as an average of a number of possible paths of the economy.

In the projections, real GNP grows at an average annual rate of about 2.7 percent from 1989 to 1993, while the civilian unemployment rate falls to about 5.8 percent (see Tables I-7 and I-8). This rate is still a little above the level that might increase inflation. As measured by the GNP deflator, inflation stays at 4.1 percent, close to its historical average of 4.3 percent since 1950, though a little below the short-term forecast for the end of 1989 (which assumes a sharp decline in the dollar between 1987 and 1989). The CPI growth rate is expected on average to be held above the growth of the GNP deflator by further declines in the dollar over the medium term. Interest rates also decline from their forecast levels in 1989 to levels consistent with the historical average of real interest rates in the period since exchange rates began floating.

The Tax Base

The tax base from which federal revenues are drawn has risen during the 1980s relative to the economy as a whole, for three reasons:

- Personal interest income has grown, in association with increasing federal net interest payments and the rapid accumulation of household debt;19/
- Federal subsidies for agriculture have risen; and

19. Household debt creates both interest payments and interest receipts. These interest payments were tax deductible under previous tax laws, though the calculation of tax bases in the National Income and Product Accounts (NIPA) does not reflect this fact. The interest receipts go directly to banks, but (given net business interest payments) they eventually increase personal interest income. Net interest payments by business are factor income payments included in GNP, while personal interest payments are treated as transfers that are not included in GNP but are included in the NIPA tax base. Thus, an increase in personal interest payments raises the NIPA tax base relative to GNP. This increase has little effect on tax revenues.

- Economic depreciation has decreased relative to GNP, mainly because of a relative decline in the prices of capital goods (especially computers).

The tax base is projected to grow at only about the same rate as GNP in the next few years (see Figure I-15). The scheduled increases

TABLE I-7. MEDIUM-TERM ECONOMIC PROJECTIONS FOR CALENDAR YEARS 1990 THROUGH 1993

	Actual	Forecast		Projected			
	1987	1988	1989	1990	1991	1992	1993
Nominal GNP (Billions of dollars)	4,486	4,744	5,068	5,414	5,782	6,179	6,606
Nominal GNP (Percent change)	5.9	5.8	6.8	6.8	6.8	6.9	6.9
Real GNP (Percent change)	2.9	2.3	2.6	2.6	2.6	2.7	2.7
Implicit GNP Deflator (Percent change)	3.0	3.4	4.1	4.1	4.1	4.1	4.1
CPI-W (Percent change)	3.6	4.5	4.9	4.6	4.4	4.4	4.4
Unemployment Rate (Percent)	6.2	6.2	6.1	6.0	5.9	5.9	5.8
Three-Month Treasury Bill Rate (Percent)	5.8	6.2	6.7	6.6	6.4	6.1	5.9
Ten-Year Government Bond Rate (Percent)	8.4	9.3	9.5	9.0	8.4	7.8	7.4
Tax Bases (Percent of GNP)							
Corporate profits	6.8	6.4	6.4	6.3	6.2	6.2	6.2
Wage and salary disbursements	49.3	49.4	49.6	49.7	49.7	49.8	49.8
Other taxable income	21.2	21.2	21.2	21.3	21.3	21.2	21.0
Total	77.3	77.0	77.2	77.3	77.3	77.2	77.0

SOURCE: Congressional Budget Office.

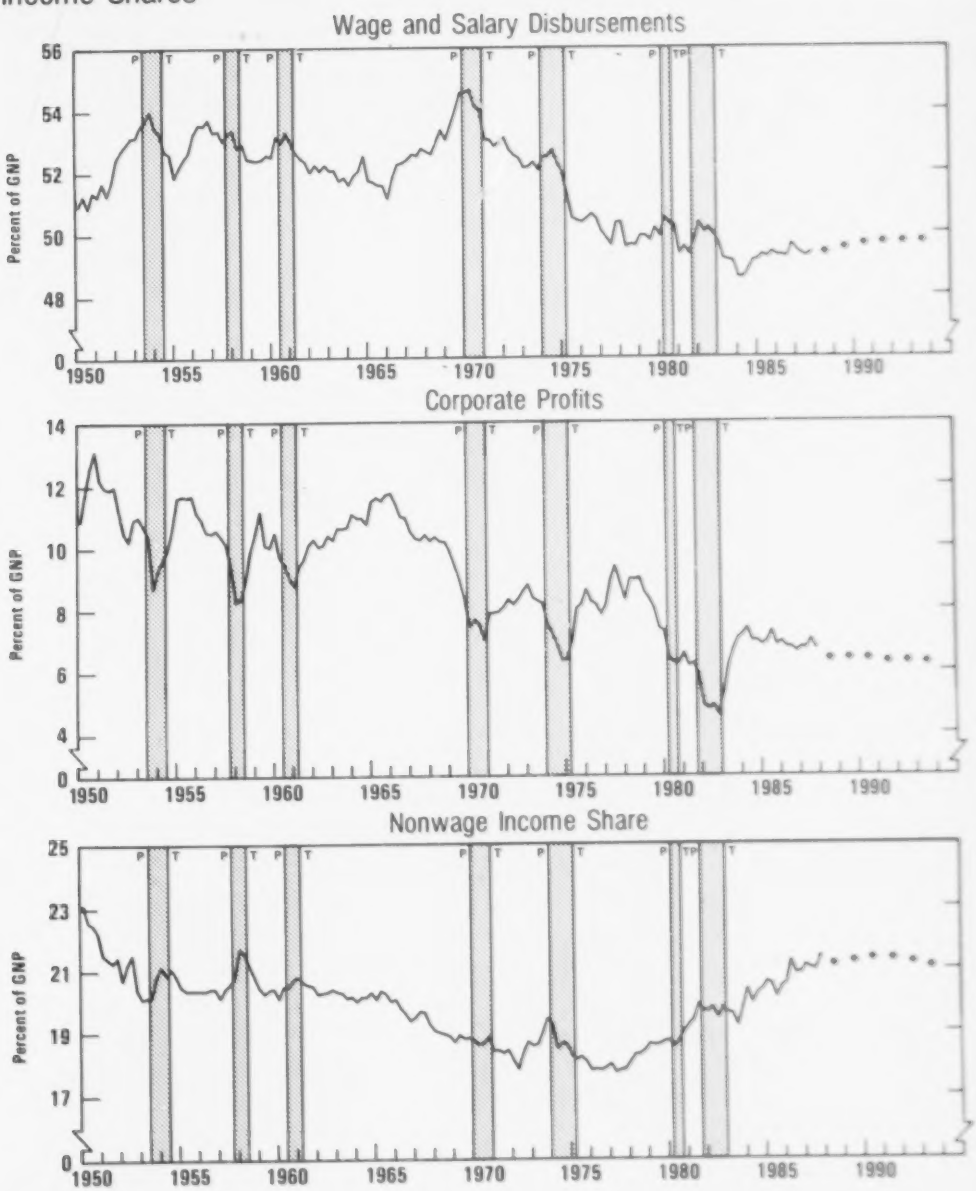
in Social Security taxes in 1988 and 1990 reduce the bases of other taxes. Federal subsidies to business are expected to fall. Consumers save more and borrow less, thus sharply reducing the growth of personal interest payments. Federal net interest payments grow relative to GNP through 1989, both because of the continued accumulation of

TABLE I-8. MEDIUM-TERM ECONOMIC PROJECTIONS FOR FISCAL YEARS 1990 THROUGH 1993

	Actual	Forecast		Projected			
	1987	1988	1989	1990	1991	1992	1993
Nominal GNP (Billions of dollars)	4,409	4,678	4,984	5,326	5,687	6,077	6,497
Nominal GNP (Percent change)	5.2	6.1	6.5	6.9	6.8	6.8	6.9
Real GNP (Percent change)	2.5	2.8	2.4	2.6	2.6	2.7	2.7
Implicit GNP Deflator (Percent change)	2.7	3.3	4.0	4.1	4.1	4.1	4.1
CPI-W (Percent change)	2.7	4.4	5.0	4.7	4.4	4.4	4.4
Unemployment Rate (Percent)	6.4	6.1	6.1	6.0	6.0	5.9	5.8
Three-Month Treasury Bill Rate (Percent)	5.6	6.1	6.7	6.7	6.4	6.1	5.9
Ten-Year Government Bond Rate (Percent)	7.9	9.1	9.6	9.2	8.6	8.0	7.5
Tax Bases (Percent of GNP)							
Corporate profits	6.7	6.5	6.4	6.4	6.3	6.2	6.2
Wage and salary disbursements	49.4	49.4	49.5	49.7	49.7	49.8	49.8
Other taxable income	21.0	21.2	21.2	21.3	21.3	21.2	21.1
Total	77.1	77.1	77.1	77.3	77.3	77.2	77.1

SOURCE: Congressional Budget Office.

Figure I-15.
Income Shares



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

federal liabilities and because of rising interest rates. After 1990, however, federal debt grows somewhat more slowly than GNP (under the baseline fiscal assumptions), interest rates fall, and federal net interest payments fall relative to GNP.

The projected changes in federal interest payments affect the nonwage income tax base, which rises relative to GNP through 1990 and falls thereafter to around its 1987 level. These changes, however, do not significantly affect expected tax collections. The wage tax base rises slightly relative to GNP, partly because of the slow growth of the economy in 1988, and partly because real wage rates are projected to increase slightly in the medium term, rather than decline as they have done throughout much of the 1980s. The economic profits tax base is expected to be reduced by scheduled Social Security tax increases, one of which went into effect in the first quarter of 1988, as well as by the upward trend in wages relative to GNP. The growth of net U.S. indebtedness will also tend to reduce economic profits, by increasing payments to foreigners of profits generated in the United States.

The Uncertainty of Economic Forecasts and Projections

Economic forecasts are always uncertain. Economists have considerably less than complete understanding of the world; the assumptions that underlie forecasts prove wrong to a greater or a lesser degree; and truly novel events may occur--whether in the Persian Gulf or on Wall Street. One way to address this uncertainty in advance is to list the areas and assumptions that seem particularly uncertain, as has been done in preceding paragraphs. Another approach is to extract from the historical record some measure of how wrong any forecast could be, given about average luck. This tack was taken in the CBO report of last August, with respect to short-term forecasts of GNP and some related variables. Appendix C updates these estimates and extends a similar analysis to projections of real GNP for the current and next five fiscal years. In projecting federal deficits, the main economic uncertainty in the short run seems to be the level of nominal GNP, while in the medium term it seems to be the level of real GNP since the effects of inflation on revenues and outlays tend to cancel each other over time.

- *Short Run.* There are about two chances in three that the level of nominal GNP for fiscal year 1989 will be within $211 billion, or 4.2 percent, of the forecast values. Given the inflation forecast, this range would imply real growth in fiscal years 1988 and 1989 averaging between 0.3 percent--which would mean a substantial recession--and 4.6 percent, which would be less than the economy's performance in the 1982 to 1985 period.

- *Medium Term.* There are about two chances in three that the level of real GNP in 1993 will turn out to be within 7 percent of its projected value, or that the average real growth rate between 1987 and 1993 will be between 1.6 percent and 3.6 percent.

This approach assumes, as noted, that the forecaster has about average luck. Recent events, in particular the turmoil in financial markets, suggest that forecasting may be even more difficult now than it usually is. First, the multiplication of economic forces and players that has accompanied the growing international openness of the United States make it more difficult to foresee the outcomes of economic policy decisions. Second, little is known yet about the response of the economy to the October crash. Finally, the most recent experience with a sudden massive fall in the stock market was the 1929 crash. Fortunately, the economy has changed substantially since 1929 (the increased and stabilizing role of government is particularly important); moreover, the policy responses that followed the 1929 crash, and that helped precipitate the Great Depression, are not being followed now. Consequently, economists have no close historical parallel with which to gauge the likely course of the economy in 1988. In short, that useful tool of the forecaster--reasoning by historical analogy--is of less service now than usual.

CHAPTER II

THE BUDGET OUTLOOK

At $150 billion, the federal government's deficit in fiscal year 1987 was well below the projections of most analysts. But the good news is already past: under current policies, the deficit will most likely rebound to $157 billion in 1988 and $176 billion in 1989, declining slowly to $134 billion in 1993. As a percentage of gross national product (GNP), the deficit is projected to decline gradually after 1989. These stubborn deficits would be even higher were it not for recent spending cuts and tax increases carrying out the budget summit agreement that was reached last fall between Congressional leaders and the Administration. Table II-1 summarizes the latest Congressional Budget Office (CBO) projections for federal government revenues, outlays, deficits, and debt.

Events since last summer have affected the deficit projections in opposing ways. The Congress and the Administration set new deficit targets, negotiated a major deficit reduction package, and enacted it into law. But projected slower economic growth in the short run and higher medium- and long-term interest rates have worsened the deficit outlook.

The rise in the deficit between 1987 and 1988 stems largely from several special factors. Tax reform and a variety of one-time outlay savings, such as asset sales and timing shifts, lowered 1987's deficit. But on balance, these same factors increase the deficit in 1988 through 1990. As shown in Table II-2, if the revenue effects of the Tax Reform Act and various one-time outlay savings enacted in 1986 and 1987 are excluded, the 1987 deficit is much higher at $187 billion, while deficits for 1988 through 1992 are virtually constant in the range of $154 billion to $163 billion. This adjusted deficit declines steadily in relation to GNP.

Economists, financial market participants, and others generally focus on the federal government's overall deficit because it determines borrowing needs and affects economic activity. The Balanced Budget

and Emergency Deficit Control Reaffirmation Act of 1987, like its predecessor passed in 1985, emphasized the importance of the overall deficit and set dollar targets and procedures for automatic cutbacks when the targets appear unlikely to be met otherwise. Nevertheless, certain programs are, by law, segregated and considered to be off-budget. The 1985 act placed the two Social Security trust funds (Old-Age and Survivors Insurance and Disability Insurance, referred to collectively as OASDI) off-budget immediately. The large and growing Social Security surpluses contribute substantially to holding down the overall deficit (see Table II-3). An earlier law, the Social Security Amendments of 1983, took Medicare's Hospital Insurance Trust Fund off-budget starting with the fiscal year 1993 budget. The surplus in the Medicare trust funds, while smaller than Social Security, is still significant. (Social Security and Medicare are two examples of trust funds that take in more than they spend. Further analysis of these

TABLE II-1. CBO BASELINE BUDGET PROJECTIONS
(By fiscal year)

	1987 Actual	1988 Base	Projections 1989	1990	1991	1992	1993
In Billions of Dollars							
Revenues	854	897	953	1,036	1,112	1,181	1,262
Outlays	1,005	1,055	1,129	1,203	1,269	1,332	1,396
Deficit	150	157	176	167	158	151	134
Debt Held by the Public	1,897	2,041	2,216	2,382	2,537	2,687	2,820
As a Percentage of GNP							
Revenues	19.4	19.2	19.1	19.4	19.5	19.4	19.4
Outlays	22.8	22.5	22.7	22.6	22.3	21.9	21.5
Deficit	3.4	3.4	3.5	3.1	2.8	2.5	2.1
Debt Held by the Public	43.0	43.6	44.5	44.7	44.6	44.2	43.4
Reference: GNP (In billions of dollars)	4,409	4,678	4,984	5,326	5,690	6,082	6,502

SOURCE: Congressional Budget Office.

two funds appears later in Box II-3, which also shows how other trust funds contribute to the deficit or surplus.)

The Congress adjourned in late December thinking that it had nailed down budget policies for two years. The deteriorating outlook for the deficit, however, makes it unlikely that the Balanced Budget Act targets can be met without further reductions. A later section of this chapter focuses on the fiscal year 1989 budget, explaining how the act will shape the coming debate.

Budget estimates depend closely on economic assumptions, which are highly uncertain. This chapter describes the bands of uncertainty around the five-year deficit estimates and presents rough rules of thumb for gauging the effect of individual economic variables such as

TABLE II-2. CBO BASELINE DEFICITS ADJUSTED FOR TAX REFORM AND ONE-TIME OUTLAY SAVINGS
(By fiscal year)

	1986	1987	1988	1989	1990	1991	1992	1993
				In Billions of Dollars				
Baseline Deficit	221	150	157	176	167	158	151	134
Adjustments								
Tax reform (Revenue effects)	--	22	-10	-16	-4	3	3	4
One-time outlay savings a/	2	15	7	b/	b/	--	--	--
Subtotal	2	37	-3	-17	-4	3	3	4
Adjusted Baseline Deficit	223	187	154	159	163	160	154	138
				As a Percentage of GNP				
Adjusted Baseline Deficit	5.4	4.2	3.3	3.2	3.1	2.8	2.5	2.1

SOURCE: Congressional Budget Office.

a. Includes assets sales and loan prepayments, timing shifts, and other factors (such as escrow releases for the Outer Continental Shelf).
b. Less than $500 million.

TABLE II-3. CBO BASELINE PROJECTIONS FOR ON-BUDGET AND OFF-BUDGET REVENUES AND OUTLAYS
(By fiscal year, in billions of dollars)

	1987 Actual	1988 Base	Projections				
			1989	1990	1991	1992	1993
On-Budget							
Revenues	641	657	694	753	805	854	909
Outlays	811	852	916	978	1,034	1,086	1,140
Deficit	170	195	222	225	229	232	231
Off-Budget (Social Security)							
Revenues	213	240	259	283	307	327	353
Outlays	194	203	213	225	236	246	256
Surplus	20	37	46	58	71	81	97
Total							
Revenues	854	897	953	1,036	1,112	1,181	1,262
Outlays	1,005	1,055	1,129	1,203	1,269	1,332	1,396
Deficit	150	157	176	167	158	151	134

SOURCE: Congressional Budget Office.

real growth, inflation, and interest rates on the budget estimates. The chapter concludes with more detailed descriptions of CBO's five-year spending, revenue, and credit projections.

THE BASELINE CONCEPT

Baseline projections show the expected consequences of current budgetary policies. They are not a forecast of budget outcomes, however--especially beyond the current year--since the future will include many policy changes. Rather, the baseline serves as a benchmark for analyzing possible policy changes. Because many factors can cause

the deficit to grow or shrink from one year to the next, the baseline is considered more useful than a comparison with the previous year's numbers for judging the effects of budget decisions.

The CBO baseline follows the specifications set forth in the revised Balanced Budget Act. The projections assume that current taxing and spending policies will continue unchanged. Projections are based on the two-year economic forecast and the longer-run economic assumptions described in the preceding chapter. For revenues and for entitlement programs such as Social Security, the baseline is projected according to current laws, with a few exceptions. In a departure from the act, a few large programs, such as Food Stamps and Guaranteed Student Loans, are assumed to be extended after their currently scheduled expirations. On the revenue side, following the act's specifications, excise taxes dedicated to four trust funds (the Airport and Airway Trust Fund, the Leaking Underground Storage Tank Trust Fund, the Hazardous Substance Superfund, and the new Vaccine Injury Compensation Trust Fund) are extended beyond their scheduled expirations in 1990 through 1992. All other programs that expire under current law are permitted to expire.

In contrast to entitlement programs, many government activities are controlled by funding levels set annually in appropriation acts. For these programs, the baseline assumes that future appropriations keep pace with inflation. Offsetting receipts (for example, receipts from Medicare premiums and oil leases) are estimated in light of current law and policy, and net interest in light of the assumed interest rates and deficits.

The specifications contained in the Balanced Budget Act, which the Office of Management and Budget (OMB) and CBO must follow, are close to the way CBO has long projected its baseline, with only two significant exceptions. First, for discretionary programs, the two budget agencies (in the absence of full-year appropriations) must extrapolate the previous year's funding levels using a single measure of inflation, the implicit price deflator for gross national product. In the past, CBO has often used special inflation rate assumptions suited to particular programs; CBO has also assumed that a few activities grow by more or less than inflation for special reasons (for example, extra funding to carry out the decennial census). Appendix D describes programs for which the use of such special assumptions remains a possible alternative to the act's specifications.

The second change lies in the treatment of personnel costs. The act requires the two agencies to use the overall inflation rate to project pay raises for government employees as well as other spending. (If the President has formally proposed, or the Congress has enacted, a different amount for the upcoming pay raise, this rate supersedes the general inflation measure.) Previously, CBO assumed pay raises tied to economywide average wage growth, generally slightly higher than inflation. The act also requires OMB and CBO to assume that federal agencies must absorb about one-fifth of the pay raise's initial cost out of their operating budgets. These more stringent specifications cause estimated costs of federal pay to grow less rapidly than previously assumed.

CBO developed a baseline using these specifications to aid in the summit negotiations. Table II-4 shows how the baseline that was used by the negotiators differed from CBO's projections of last August.

TABLE II-4. COMPARISON OF BUDGET SUMMIT BASELINE DEFICIT WITH CBO AUGUST 1987 ESTIMATES
(By fiscal year, in billions of dollars)

	1988	1989	1990	1991	1992
CBO August Baseline Deficit	183	192	176	165	151
Policy Differences					
Revenues	--	--	--	a/	a/
Pay raises	-1	-2	-3	-5	-8
Other programmatic assumptions	-2	-3	-4	-4	-4
Medicare premiums	-1	-1	-1	-1	-1
Debt service	a/	-1	-1	-2	-3
Total Differences	-3	-6	-10	-12	-16
Budget Summit Baseline Deficit	180	186	166	152	135

SOURCE: Congressional Budget Office.

a. Less than $500 million.

CHANGES IN THE ESTIMATES SINCE THE BUDGET SUMMIT

Even though the Congress substantially carried out the terms of 1987's budget summit, the next five years are likely to be marked by persistently high deficits unless there are further changes in budgetary policy. In fact, the newest projections show some short-term but little long-term improvement in the deficits that were projected by CBO last fall. The savings from implementing the budget summit agreement are virtually offset by reestimates attributable to revised economic and technical assumptions (see Table II-5).

Recent Legislation: Carrying Out the Budget Summit Agreement

Legislation passed to carry out the summit agreement mainly reflects two omnibus bills--the reconciliation bill (Public Law 100-203) and a continuing resolution (Public Law 100-202). These two laws changed both revenues and outlays. Together, they raised revenues by $11 billion in 1988 and by more in later years (see Table II-5). The reconciliation bill contributed most of the increases; roughly one-half of the bill's revenue gain comes from corporate taxes, one-quarter from excise taxes, and the remainder from a variety of individual income, payroll, and estate tax provisions. By strengthening the enforcement resources of the Internal Revenue Service, the continuing resolution is expected to contribute about $2 billion a year in extra revenues. The tax provisions are described in more detail later in the chapter.

Legislation carrying out the summit agreement cut outlays in a variety of programs--including Medicare, farm price supports, and defense and nondefense discretionary programs--and also permitted a number of one-time savings such as loan prepayments. Box II-1 describes the savings already achieved under the budget summit as well as those measures awaiting further action.

Some of the savings agreed to by the summit negotiators remain to be carried out and are not included in the new baseline. The agreement called for capping growth in discretionary appropriations--both defense and nondefense--below the amounts that would be required to cover inflation. The CBO baseline does not reflect these caps, how-

TABLE II-5. CHANGES IN CBO BASELINE ESTIMATES SINCE NOVEMBER (By fiscal year, in billions of dollars)

	1988	1989	1990	1991	1992
Revenues					
November 1987 Estimate	897	954	1,036	1,115	1,195
Enacted Legislation	11	16	18	17	13
Economic Reestimates	-7	-12	-13	-15	-20
Technical Reestimates	-3	-5	-5	-5	-6
Total	a/	-1	a/	-3	-13
Current Estimate	897	953	1,036	1,112	1,181
Outlays					
November 1987 Estimate	1,077	1,140	1,202	1,267	1,330
Enacted Legislation	-23	-19	-22	-25	-29
Economic Reestimates					
Interest rates	a/	8	18	21	21
Cost-of-living adjustments	a/	-2	-3	-3	-3
Debt service	a/	2	4	7	11
Other	a/	1	2	2	3
Subtotal	1	8	20	27	31
Technical Reestimates	a/	1	3	a/	a/
Total	-22	-11	1	2	3
Current Estimate	1,055	1,129	1,203	1,269	1,332
Deficit					
November 1987 Estimate	180	186	166	152	135
Enacted Legislation	-34	-36	-40	-42	-42
Economic Reestimates	9	21	33	42	51
Technical Reestimates	2	6	8	5	7
Total	-23	-10	1	5	16
Current Estimate	157	176	167	158	151

SOURCE: Congressional Budget Office.

a. Less than $500 million.

ever, because they will not be carried out until the 1989 appropriation process. Similarly, the baseline includes neither the asset sales in 1989 that remain to be specified under the terms of the budget summit nor the additional revenues resulting from extra resources for enforcement.

Economic and Technical Changes

Recent legislation, in sum, has substantially met the goals of the budget summit agreement. But these reductions are largely offset by revisions stemming from new economic assumptions.

As discussed in Chapter I, CBO expects slow growth in the first half of 1988. Projected revenues are about $7 billion lower in 1988, and $12 billion to $20 billion lower each year thereafter, because of the revised economic outlook (see Table II-5). Interest rates--especially medium- and long-term rates--rose sharply between August and October before declining in the wake of the stock market crash. CBO forecasts that interest rates will climb gradually in the second half of 1988 and will remain well above the levels assumed last August. These higher interest rates have little immediate effect but are expected to raise outlays by $8 billion in 1989 and $21 billion in 1992. Partly mitigating the effect of lower growth and higher interest rates are smaller cost-of-living adjustments in Social Security and other retirement and disability programs, which reduce outlays by $2 billion to $3 billion a year beginning in 1989, relative to earlier estimates. Smaller changes occur in other programs that are sensitive to the economy, such as Medicare and Medicaid, Unemployment Insurance, and oil lease receipts.

Technical revisions, which primarily reflect more information about the effects of the Tax Reform Act of 1986, reduce projected revenues by $3 billion in 1988 and by slightly larger amounts in later years; these revisions are explained in a later section. Outlays, in the aggregate, are affected little by technical changes.

BOX II-1
THE BUDGET SUMMIT

Soon after the stock market crash of October 19, Congressional leaders from both parties and representatives of the Administration began negotiations aimed at reducing the budget deficit. On November 20, the President and the negotiators announced an agreement to cut the deficit by $30 billion in 1988 and $46 billion in 1989. A month later, the Congress passed two laws--an appropriation measure and a reconciliation bill--carrying out the agreement. The accompanying table summarizes the deficit reduction achieved in the two bills and in a few other, smaller pieces of legislation.

The summit agreement contains a novel feature: separate two-year limits on both defense and nondefense discretionary appropriations. These appropriation caps, found in Section 8001 of the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), are to serve as the basis for the committee spending allocations in the 1989 budget resolution. In the Senate, it will not be in order to consider a 1989 budget resolution that is inconsistent with the caps, unless the point of order is overridden by a three-fifths vote.

The deficit reduction figures shown in the table do not reflect the 1989 savings from the appropriation cap because these savings remain to be enacted. Instead, they reflect 1989 appropriations at the baseline level--that is, the 1988 amounts adjusted for inflation of roughly 4 percent. The caps, in contrast, allow increases in budget authority of only 2.5 percent for defense and 2.0 percent for nondefense programs. Adhering to these limits would further reduce 1989 outlays by roughly $1 billion in defense and $2 billion in nondefense programs. Section 8005 of the reconciliation bill calls for selling an additional $3.5 billion of assets in 1989. Finally, $0.4 billion in revenues would result from further boosts in IRS enforcement resources. Together with the resulting savings in debt service costs, these measures would save $7 billion, bringing the total 1989 deficit reduction to $43 billion.

	1988	1989
Revenues		
Taxes	9.2	14.2
IRS Compliance (Gross)	1.8	2.5
User Fees	-0.5	-0.6
Total Revenues	10.5	16.1
Outlays		
National Defense	5.1	7.4
Nondefense Discretionary	2.5	1.6
Entitlements and Other Mandatory Spending		
Medicare	2.1	3.8
Farm price supports	1.2	0.9
Postal Service and Civil Service	0.8	0.6
Pension Benefit Guaranty Corporation premiums	0.4	0.4
Veterans Administration loan sales and fees	0.8	0.8
Guaranteed Student Loan balances	0.2	--
Other	0.2	-0.4
Subtotal	5.7	6.2
Other User Fees (Offsetting receipts)	0.8	0.9
Asset Sales and Prepayments	7.7	--
Debt Service	1.3	3.4
Total Outlays	23.1	18.9
Deficit Reduction		
Total Reduction to Date	33.6	35.6

A CLOSER LOOK AT 1989

The key provisions and deadlines in the Balanced Budget Reaffirmation Act, which will shape the budget debate in the coming months, are summarized in Box II-2. The act requires across-the-board spending cutbacks, or sequestration, unless the Office of Management and Budget projects a fiscal year 1989 deficit of less than $146 billion--the official $136 billion target plus a $10 billion margin. Alternatively, the Congress and the Administration can avoid automatic cuts by enacting $36 billion in deficit reductions between now and October. The Congress could meet these targets in part by carrying out the budget summit's cap on discretionary appropriation growth, saving an additional $3 billion. The legislators could also pass and carry out a budget resolution containing other deficit reduction measures. The act, however, forbids counting certain types of deficit reductions toward the requirement. The budget summit agreement, for example, contemplates $3.5 billion of asset sales or loan prepayments in 1989 that are yet to be specified; under the act, however, such asset sales or prepayments would not count as deficit reductions.

What would a 1989 sequestration look like based on today's projections? CBO currently estimates the 1989 deficit at $176 billion, $40 billion above the act's target. The maximum sequestration allowed under the law, however, is $36 billion. Cutting $36 billion wholly through sequestration would require reductions of approximately 9 percent in defense programs and 13 percent in nondefense, nonexempt programs. These required reductions are quite high, both because so much of the budget is exempt and because spending lags necessitate large reductions in budget resources to achieve given savings in outlays.

Estimates of across-the-board reductions at this time are merely previews. Ultimately, any cutbacks will depend on estimates made by the Office of Management and Budget in August and October. By then, of course, the economic outlook may have changed again. As discussed in the next section, such changes could have significant effects on the budget estimates.

BOX II-2
THE BALANCED BUDGET REAFFIRMATION ACT

The Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (Public Law 100-119) set new deficit targets for fiscal years 1988 through 1993. The act also modified the automatic spending reduction, or sequestration, procedures of the original Balanced Budget Act (Public Law 99-177) in order to make them pass constitutional muster. The new deficit targets established by the act are (by fiscal year, in billions of dollars):

Fiscal Year	Billions of Dollars
1988	144
1989	136
1990	100
1991	64
1992	28
1993	0

For 1989, across-the-board cancellation of budgetary resources would be triggered automatically if the deficit estimated on October 10, 1988, exceeds $146 billion (the $136 billion target plus a $10 billion margin of error) *and* if deficit reduction measures achieved since January 1, 1988, total less than $36 billion.

Under the Balanced Budget Reaffirmation Act, the Director of the Office of Management and Budget (OMB) determines each year whether or not sequestration is necessary and how large the cuts must be. The Congresssional Budget Office (CBO) provides OMB and the Congress with advisory reports, which provide a benchmark against which the Congress and others may assess the OMB calculations. If either OMB or CBO projects real economic growth to be less than zero for any two consecutive quarters, or if the Department of Commerce reports actual real growth to have been less than 1 percent for two consecutive quarters, the Congress may suspend many of the provisions of the act. This year's timetable for the two agencies' reports and the sequestration orders is as follows:

Snapshot date for initial reports	August 15
Initial CBO report	August 20
Initial OMB report	August 25
Initial sequestration order	August 25
Revised CBO report	October 10
Revised OMB report	October 15
Final sequestration order	October 15

ECONOMIC UNCERTAINTY AND THE DEFICIT

Federal revenues and outlays are closely tied to economic conditions. Revenues depend heavily on taxable incomes--that is, wages and salaries, nonwage income such as interest, and corporate profits. Many spending programs (for example, Social Security) contain explicit inflation adjustments, while the baseline assumes that funding for other programs will be adjusted for overall inflation. Finally, interest costs on the government's large and growing debt depend on interest rates.

Uncertainty surrounding these economic assumptions feeds the uncertainty about the budget estimates. Last summer, CBO analyzed past Congressional budget resolutions and found that overly optimistic economic assumptions, on average, contributed about $23 billion to errors in the deficit forecast for the following year, the largest single source of error. That report also described the statistical uncertainty of deficit forecasts done one year ahead. This section updates and expands last summer's analysis to describe the uncertainty of the long-run deficit forecast. But first it describes how economic variables affect the budget estimates and presents rough rules of thumb to gauge their effects.

Rules of Thumb

Four economic variables--real economic growth, unemployment, inflation, and interest rates--have particularly strong effects on budget projections. Table II-6 shows the estimated budgetary effects of a one percentage-point change beginning in January 1988 in each of these four variables. Such illustrations of the economy's effect on budget estimates are commonly termed rules of thumb.

Real economic growth has powerful effects on the budget projections. The baseline forecast assumes that real growth during the 1988-1993 period averages about 2.6 percent a year. The first rule of thumb shows what happens if real growth is one percentage point lower each year. Wages and salaries, profits, and other incomes grow less rapidly than in the baseline. After six years of subpar growth, both real and nominal GNP in 1993 are about 6 percent below their

TABLE II-6. EFFECTS ON CBO BASELINE BUDGET PROJECTIONS OF SELECTED CHANGES IN ECONOMIC ASSUMPTIONS
(By fiscal year, in billions of dollars)

	1988	1989	1990	1991	1992	1993
Real Growth: Effect of One-Percentage-Point Lower Annual Rate Beginning January 1988						
Change in Revenues	-5	-18	-34	-52	-71	-91
Change in Outlays	1	3	7	13	19	28
Change in Deficit	6	21	41	64	90	119
Unemployment: Effect of One-Percentage-Point Higher Annual Rate Beginning January 1988						
Change in Revenues	-21	-35	-38	-40	-42	-43
Change in Outlays	4	7	11	15	19	24
Change in Deficit	24	42	48	55	61	67
Inflation: Effect of One-Percentage-Point Higher Annual Rate Beginning January 1988						
Change in Revenues	4	16	27	41	55	72
Change in Outlays	3	14	26	39	52	66
Change in Deficit	-1	-1	-1	-2	-3	-7
Interest Rates: Effect of One-Percentage-Point Higher Annual Rates Beginning January 1988, All Maturities						
Change in Revenues	--	--	--	--	--	--
Change in Outlays	3	11	16	21	26	30
Change in Deficit	3	11	16	21	26	30
Interest Rates: Effect of One-Percentage-Point Higher Annual Rates Beginning January 1988, Medium and Long Maturities Only						
Change in Revenues	--	--	--	--	--	--
Change in Outlays	1	6	10	14	18	21
Change in Deficit	1	6	10	14	18	21

SOURCE: Congressional Budget Office.

baseline levels in this path. The most important effect of slower growth is on federal revenues, which are lower by $5 billion in 1988 and $91 billion in 1993 (see Table II-6). Higher unemployment also adds to spending, including unemployment compensation and programs for the needy. After a year or two, however, the major spending increase associated with sluggish economic growth occurs in the federal government's interest costs: bigger deficits add to borrowing needs and hence to the costs of servicing the debt.

The second rule of thumb shows the budgetary effects of an increase of one percentage point in the unemployment rate. As in the first rule of thumb, higher unemployment and lower economic growth depress revenues and raise federal government spending. This illustration differs, however, in that it does not posit an ever-widening gap between the economy's potential and its performance. A well-known generalization (Okun's law) links a 1.0 percentage-point change in the unemployment rate to a change of about 2.5 percentage points in economic growth. Thus, GNP in the higher-unemployment case is always 2.5 percent below the baseline--much lower in 1988, but much higher by 1993, than in the first rule of thumb.

A third rule of thumb summarizes the budgetary effects of a one-percentage-point increase in inflation. Inflation boosts federal government revenues mainly by increasing taxable incomes. The progressive structure of the personal income tax causes revenues to outpace inflation. This effect was curtailed by indexation of the personal income tax brackets, which began in 1985, was suspended for two years during the phase-in of tax reform, and will resume in 1989. While revenues grow with inflation, outlays react almost as fast. Nearly all benefit programs, which account for over 40 percent of federal spending, provide cost-of-living adjustments or otherwise respond more or less automatically to inflation. Discretionary programs, both defense and nondefense, contain no automatic inflation adjustments; the rule of thumb assumes, however, that annual funding keeps pace with inflation to avoid squeezing the real resources of these programs. Finally, federal government interest costs respond to the higher interest rates that would almost certainly accompany higher inflation. As Table II-6 shows, total outlays go up about as

much as revenues, leaving the deficit almost unchanged. With higher nominal GNP, both the deficit-to-GNP and debt-to-GNP ratios are lower than in the baseline.

The last two rules of thumb describe the budget's response to higher interest rates. Interest costs on the government's large and growing debt are highly sensitive to market interest rates. Raising the assumed interest rates by one percentage point for all maturities--short, medium, and long--would increase outlays by $3 billion in 1988. By 1993, almost the entire debt bears the higher rates; with most of the pre-1988 debt refinanced and almost $1 trillion in new debt added during the past six years, outlays are $30 billion higher. (Besides interest on the debt, these estimates reflect small changes in other interest-sensitive programs, such as Guaranteed Student Loans.) For simplicity, Table II-6 shows no revenue effects of higher interest rates.

In recent years, the Treasury has concentrated its borrowing in medium- and long-term maturities, and CBO assumes that this practice will continue. Anticipating future rates on such Treasury securities (known as notes and bonds) is therefore especially important to budget projections. The last rule of thumb in Table II-6 shows the sensitivity of projections to a one percentage-point increase in medium- and long-term rates only--that is, maturities of two to thirty years. Outlays are $1 billion higher in 1988 and $21 billion higher in 1993.

While these rules of thumb clearly show the link between economic assumptions and budget estimates, they have their limitations. Economic variables are related to one another, and sustained changes in one rarely occur in isolation. CBO does not use rules of thumb to project the budget, looking instead at dozens of economic and other variables that have important budgetary effects. Furthermore, Table II-6 shows one percentage-point changes as a convenience and not to reflect typical forecasting errors, since some variables are notoriously harder to predict than others. For example, a one percentage-point error in the interest rate assumptions is much more likely than a one percentage-point error in projecting real economic growth over a five-year horizon.

Estimating the Uncertainty of Budget Projections

The Congressional Budget Office, the Administration, the Congress, and many others must make specific deficit projections or set targets for as many as five years. Yet the economic assumptions underlying these estimates are highly uncertain. Understanding the variability in budget outcomes that stems from economic developments is extremely important for policymakers--helping them, for example, to interpret deficit announcements and to set reasonable goals for fiscal policy. Is there a way to describe this uncertainty?

As discussed in Chapter I, CBO has developed a statistical approach for describing the uncertainty of short-run GNP forecasts. Recognizing the randomness and unpredictability of economic performance, this method conducts thousands of simulations and analyzes the results. The uncertainty of GNP estimates was summarized in Chapter I, and this section presents the associated uncertainty of deficit estimates. This line of inquiry describes only the uncertainty associated with the economic forecast; of course, the deficit may also differ from the baseline projections because of policy actions and technical factors. (Appendix A tells how inaccurate economic assumptions, policy assumptions, and technical estimating errors have contributed to past errors in Congressional deficit forecasts.)

The single most influential economic variable affecting the next year's deficit estimates is the level of nominal gross national product. Historically, the largest source of error in Congressional budget estimates traceable to economic factors stems from revenue projections, especially corporate and individual income taxes and social insurance taxes. These errors are strongly related to errors in the assumption about nominal GNP. As noted in Chapter I, there is about a two-thirds chance that fiscal year 1989 GNP will fall within 4.2 percent of the level assumed by CBO. Based on this uncertainty about GNP, there is about a two-thirds chance that the deficit will fall within $49 billion of the level projected by CBO.

The uncertainty of longer-run deficit forecasts is greater than that of short-term forecasts. The main uncertainty in longer-run budget projections stems not from nominal but from real economic growth. As shown above in the discussion of rules of thumb, higher inflation essentially leaves the deficit unchanged, whereas real growth has

powerful effects on the projections. Appendix C describes how CBO extended the analysis to encompass five years of uncertain GNP growth. The results suggest that there is about a two-thirds chance that the 1993 deficit under current policies will lie within $125 billion of CBO's projections, corresponding to a range for real GNP that is 7 percent lower or higher than the level projected by CBO. Besides showing the response of revenues to lower (or higher) GNP, this estimate reflects the additional interest costs incurred (or saved) on debt borrowed during the intervening five years.

SPENDING PROJECTIONS BY MAJOR CATEGORY

Total outlays are likely to reach $1,055 billion in 1988, an increase of 5 percent over 1987. Even this increase--small by recent years' standards--may be overstated, since a variety of one-time outlay reductions held down spending in 1987. During the next five years, outlays under current policies are projected to grow by about 6 percent a year. Outlays rise by 7 percent in 1989 as one-time savings that shrink 1988 outlays disappear, but growth tapers off thereafter, helped by a slowing of interest growth.

Baseline outlay projections for five broad categories that are commonly used by the Congress to address aggregate spending are shown in Table II-7. These five categories--defense, nondefense discretionary spending, entitlements, interest, and offsetting receipts--are defined in more detail in Appendix G, which also shows historical spending by category. Yet another way to portray federal government spending uses 19 budget functions describing particular national needs--defense, transportation, health, and so forth--that are addressed by government programs. Baseline projections by function are shown in Appendix E.

National Defense

Spending for national defense is dominated by Defense Department programs, but also includes defense activities of other agencies such as the Energy Department's nuclear weapons programs and the General

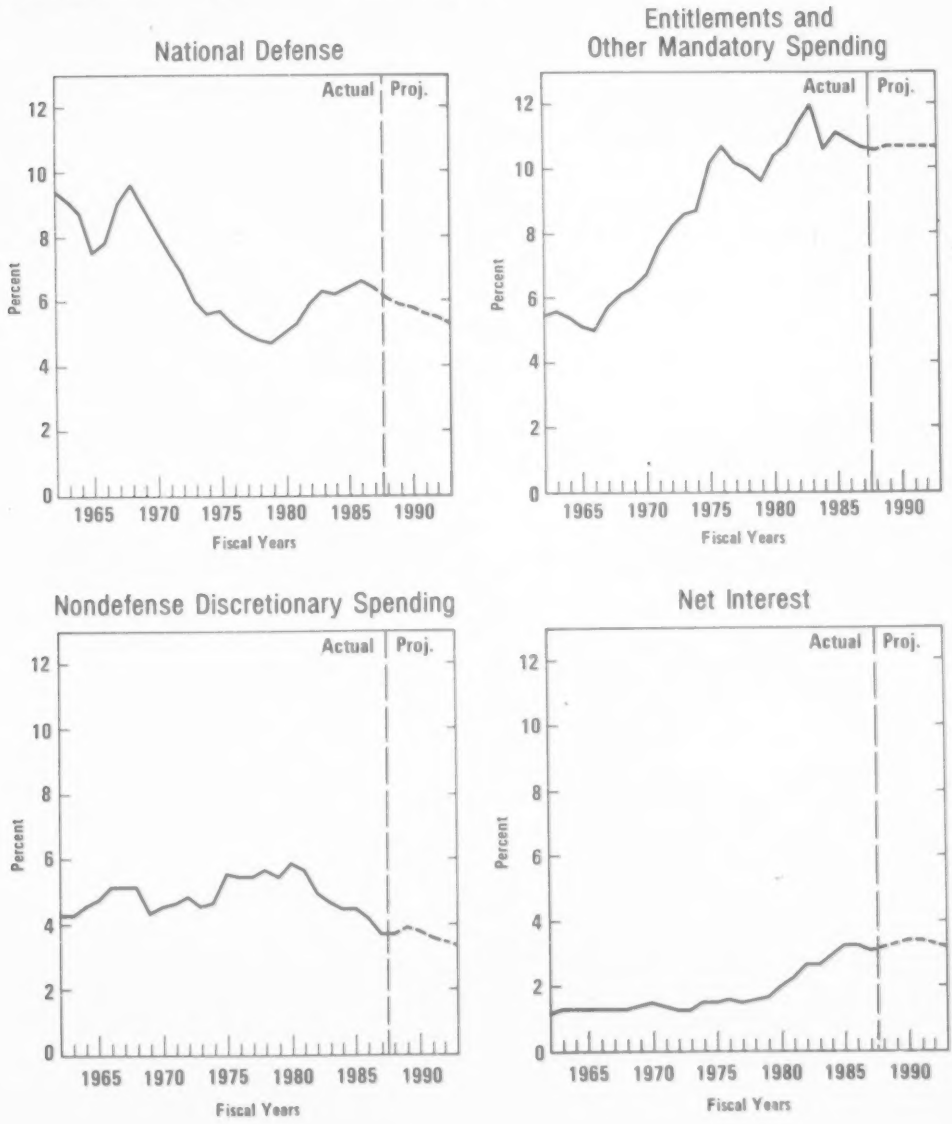
Services Administration's stockpile activities. The continuing resolution for fiscal year 1988 granted defense budget authority of $291 billion, an increase of only 2 percent over 1987. The baseline assumes that budget authority will increase by about 4 percent to 5 percent annually in 1989 and beyond to reflect overall inflation. Future pay raises for both uniformed and civilian employees match the inflation rate, after a 2 percent increase in 1988. Outlays grow somewhat more slowly than budget authority. As a share of GNP, defense outlays are down from their early- and mid-1980s peak but continue to represent a larger share than in the 1970s (see Figure II-1).

TABLE II-7. CBO BASELINE OUTLAY PROJECTIONS FOR MAJOR SPENDING CATEGORIES (By fiscal year)

Spending Category	1987 Actual	1988 Base	Projections 1989	1990	1991	1992	1993
In Billions of Dollars							
National Defense	282	287	295	306	320	333	345
Nondefense Discretionary Spending	164	175	193	202	207	215	221
Entitlements and Other Mandatory Spending	474	497	533	572	610	649	693
Net Interest	139	151	166	184	196	201	206
Offsetting Receipts	-54	-55	-58	-61	-63	-66	-69
Total	1,005	1,055	1,129	1,203	1,269	1,332	1,396
As a Percentage of GNP							
National Defense	6.4	6.1	5.9	5.8	5.6	5.5	5.3
Nondefense Discretionary Spending	3.7	3.7	3.9	3.8	3.6	3.5	3.4
Entitlements and Other Mandatory Spending	10.8	10.6	10.7	10.7	10.7	10.7	10.7
Net Interest	3.1	3.2	3.3	3.4	3.4	3.3	3.2
Offsetting Receipts	-1.2	-1.2	-1.2	-1.1	-1.1	-1.1	-1.1
Total	22.8	22.5	22.7	22.6	22.3	21.9	21.5

SOURCE: Congressional Budget Office.

Figure II-1.
Outlays by Category as Shares of GNP



SOURCE: Congressional Budget Office.

Actual defense spending depends not just on the total amount of budget authority but on its mix. Some defense activities are marked by long lags between appropriations, obligations, and actual spending. Shifting $1 billion in budget authority from procurement to operations and maintenance, for example, might raise outlays by about $600 million to $700 million in the first year because the former is a slow-spending and the latter a fast-spending category. The baseline assumes that the relative priorities in the 1988 appropriations--procurement, operations and maintenance, research and development, and so forth--will continue. But the Congress and the Administration may well emphasize particular activities. The massive defense build-up of the early and mid-1980s and the subsequent retrenchment, for example, did not treat all categories of spending equally; two activities--procurement and construction--received both the biggest increases and the sharpest reductions in annual funding.

While the 1988 appropriation bill fell short of adjusting the defense budget for inflation, it roughly preserved the previous year's mix of programs. Most major activities received just enough to cover inflation or only slightly less. Procurement, though, fell short by 3 percent, and only military construction received an increase greater than inflation--about 5 percent more.

The recent budget accord between the Congress and the Administration called for restraining growth in 1989 appropriations. Carrying out the summit's goal would further reduce the baseline budget authority for defense by about $8 billion and defense outlays by about $1 billion in 1989.

Defense outlays were reduced by about $3 billion in one-time savings in 1987, reflecting the delay of paychecks from September 30 to October 1, 1987. (The net budgetary effect was somewhat smaller because the timing shift lowered revenues as well.) This shift in pay dates affects outlays in 1988 and beyond only negligibly.

Nondefense Discretionary Spending

Like the defense budget, nondefense discretionary programs cover a wide variety of federal activities, including international affairs,

transportation, veterans' medical care, and the operations of the Internal Revenue Service. Slightly over a fifth of these outlays provide pay and benefits for civilian agency employees, and about a third reflect grants to state and local governments.

This spending category bore the brunt of budget restraint in the 1980s, declining from almost 6 percent of GNP at the start of the decade to about 4 percent at present (see Figure II-1). Not all functions fared equally. Programs in training, social services, employment, energy, natural resources and environment, and community development have grown less than the average and in some cases have even declined. Over the next five years, baseline outlays for nondefense discretionary programs increase by about 4 percent or 5 percent a year while continuing to decline slightly as a share of GNP.

As noted earlier in Box II-2, the budget summit agreement provides for an aggregate limit on nondefense discretionary appropriations in 1989. The cap covers only those discretionary programs that are under the jursidiction of the Appropriations Committees--$187 billion out of $193 billion in baseline outlays for the total category. The remaining $6 billion consists primarily of outlays for revolving loan funds, which are subject to appropriated loan limits. Adhering to the $185 billion cap would reduce 1989 outlays by almost $2 billion relative to the baseline.

Nondefense discretionary outlays would have been about $7 billion higher in 1987 were it not for various one-time savings, primarily asset sales and prepayments of loans. Spending in 1988 likewise reflects more than $9 billion in temporary savings, mainly from prepayments of loans by participants in Rural Electrification Administration and Foreign Military Sales programs. These temporary actions, though, do not reduce the deficit in later years.

Entitlements and Other Mandatory Spending

Entitlements pay benefits to any person, business, or unit of government that seeks payments and meets the eligibility rules set by the law. The Congress thus controls spending for these programs indirectly, by choosing the eligibility criteria and the benefit or payment formula, rather than directly through the appropriation process.

Virtually all of the major federal benefit programs are entitlements. This category encompasses some less obvious programs, such as farm price supports, because they also pay benefits to anyone who qualifies. Finally, included in this category are mandatory spending programs--for example, to meet the insurance obligations of the Federal Deposit Insurance Corporation.

Means-Tested Programs. Only a sixth of entitlement spending goes to people who must prove eligibility based on need (see Table II-8). These means-tested entitlements grow from $82 billion in 1988 to $117 billion in 1993. Medicaid grants to the states is the largest program in this category and grows by an average of 11 percent annually from 1988 to 1993. Medicaid covers people who qualify by virtue of their participation in certain income support programs (the categorically eligible) as well as applicants with greater incomes but huge medical bills (the medically needy). Rising costs of medical care and greater use of covered services fuel the program's growth. The states and the federal government jointly administer another program, Family Support Payments (primarily Aid to Families with Dependent Children). Means-tested programs also include Food Stamps, Supplemental Security Income for the aged, blind, and disabled, and several other programs summarized in Table II-8.

Non-Means-Tested Programs. Most entitlement spending is not means-tested, and Social Security and Medicare dominate this category. Social Security now pays monthly cash benefits to 38 million retired and disabled workers and their spouses, dependents, and survivors. The baseline projections reflect growth in the beneficiary population of about 2 percent a year as well as rising average benefits, mainly because of cost-of-living adjustments. Medicare, a smaller program, nevertheless grows much faster than Social Security. Driven by growth in the beneficiary population, rising costs of medical care, and greater use of covered services, Medicare spending virtually doubles between 1987 and 1993 in the absence of further policy changes. Medicare's Hospital Insurance program derives most of its funds from payroll taxes, while the Supplementary Medical Insurance program, which covers physicians' services, is funded approximately one-quarter by beneficiary premiums and three-quarters by general

TABLE II-8. CBO BASELINE OUTLAY PROJECTIONS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING CATEGORIES (By fiscal year, in billions of dollars)

Category	1987 Actual	1988 Base	Projections				
			1989	1990	1991	1992	1993
Means-Tested Programs							
Medicaid	27	31	34	38	42	47	52
Food Stamps	12	12	13	13	14	14	15
Supplemental Security Income	11	13	13	14	15	16	17
Family Support	11	11	12	12	12	13	14
Veterans' Pensions	3	4	4	4	4	3	3
Child Nutrition	3	4	5	5	5	6	6
Earned Income Tax Credit	1	3	4	4	5	5	5
Guaranteed Student Loans	3	2	1	2	2	2	2
Other	1	1	2	2	2	2	2
Total, Means-Tested Programs	74	81	88	94	101	109	117
Non-Means-Tested Programs							
Social Security	306	317	333	354	380	409	440
Medicare	80	87	96	107	118	132	147
Subtotal	285	304	327	350	386	416	447
Other Retirement and Disability							
Federal civilian a/	26	27	29	32	35	38	41
Military	18	19	20	22	23	24	26
Other	5	5	5	5	5	5	6
Subtotal	49	51	54	58	61	68	69
Unemployment Compensation	17	15	16	17	17	18	19
Other Programs							
Veterans' benefits b/	13	14	14	14	15	15	16
Farm price supports	20	18	18	18	17	14	13
Social services	4	4	5	5	5	6	6
Other	9	8	10	9	9	8	8
Subtotal	49	45	47	47	45	42	41
Total, Non-Means-Tested Programs	400	415	444	478	509	541	576
Total							
All Entitlements and Other Mandatory Spending	474	497	533	572	610	649	693

SOURCE: Congressional Budget Office.
a. Includes Coast Guard retirement.
b. Includes veterans' compensation, readjustment benefits, life insurance, and housing programs.

revenues. Social Security and Medicare are operated as trust funds; the contributions of these and other trust funds to budget totals are summarized in Box II-3.

Other retirement and disability programs are dominated by the federal government's retirement plans for both civilian and military employees and the Railroad Retirement program. Indexed to the cost of living, these programs grow only slightly faster than inflation. Another large entitlement--unemployment compensation--grows little under the baseline assumptions about the labor force, unemployment rates, and average benefits.

Outlays for the remaining entitlement and mandatory programs grow little or shrink under current policies. The largest program, farm price support payments, peaked in mid-decade; projected outlays, while still high, reflect improvements in the supply and demand balance and in the farm export outlook.

Entitlement outlays were lowered by about $1 billion in 1987 by timing shifts for the final general revenue-sharing payment and Medicare. Stretching out lump-sum refunds under the Civil Service Retirement program, as mandated in the recent reconciliation act, reduces outlays in 1988 and 1989 but has no long-run impact.

Net Interest

Net interest costs grow rapidly as the government continues to borrow to finance its deficits. Increases in interest rates in the CBO short-term forecast further boost interest outlays. While the government pays interest to investors holding its $2 trillion debt, it also collects interest from several sources, primarily its cash balances and loans. This interest income is virtually flat over the next five years, reflecting asset sales and prepayments as well as sluggish new lending.

Net interest outlays grow by about $12 billion in 1988, $15 billion in 1989, and $18 billion in 1990 before gradually leveling off. In most of these years, the government borrows approximately $150 billion in new money and must also refinance its maturing debt, often at higher interest rates. In fiscal year 1987, in contrast, net interest outlays barely grew at all because of huge savings on the refinancing of old,

high-coupon debt at lower rates. One-time savings--mainly about $1 billion in interest receipts on Outer Continental Shelf escrow releases--also dampened interest growth in 1987.

Net interest, of course, is highly sensitive to assumptions about interest rates. Interest also depends on the assumed deficits. If the government must borrow an extra $10 billion a year--for example, because of slower revenue growth or greater noninterest outlays--the cost of servicing the extra debt, small at first, grows to almost $6 billion in 1993.

The baseline projections of federal debt are shown in Table II-9. Federal government borrowing--the figure most watched by credit market participants--is about equal to the annual deficits, except that it reflects other means of financing such as drawdowns in the Treasury's cash balance. Such other means of financing are unimportant in the long run; ultimately, the Treasury must finance deficits by borrowing. Total debt held by the public grows from about $1.9 trillion at the end of 1987 to $2.8 trillion at the end of 1993.

While debt held by the public best measures the economic importance of federal borrowing, many people are more familiar with a larger figure--the gross federal debt. Gross debt includes Treasury securities held by federal trust funds and certain other funds (see Box II-3). Interest payments on these funds' holdings are intragovernmental and do not affect the deficit. Gross federal debt is very similar to the figure voted on by the Congress when it enacts a new statutory debt limit. The Congress last September approved an increase in the ceiling to $2.8 trillion, which is expected to suffice through mid-1989.

Clouding the calculation of federal debt is the treatment of zero-coupon bonds that the Treasury Department will soon issue to Mexico as part of a debt restructuring. Expected to raise about $2 billion, the bonds will carry a face value of about $10 billion payable in 20 years. The baseline counts only $2 billion as borrowing from the public, treating the Mexican bonds like any other debt issue; based on indications from the Treasury Department, however, it counts the full $10 billion in debt subject to statutory limit. The Mexican bonds will substitute for other debt issues; sold at competitive rates, they will have little or no effect on the interest projections.

BOX II-3
TRUST FUNDS IN THE BUDGET

The federal government operates many trust funds to finance particular programs. In fact, the total deficit reflects large and growing trust fund surpluses offset by even larger deficits in the general fund. In 1988, the baseline deficit of $157 billion comprises a $97 billion trust fund surplus and a $254 billion federal funds deficit. The entire improvement in the baseline deficit from 1988 to 1993 occurs in trust fund programs; as shown in the table below, the federal funds deficit actually grows. Large surpluses are mirrored in these funds' investments in Treasury securities, which increase from $431 billion at the end of 1987 to $1.2 trillion in 1993.

Under the Balanced Budget and Emergency Deficit Control Act of 1985, receipts and outlays of the two Social Security trust funds--Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI)--are not included in unified budget totals. The Social Security Amendments of 1983 moved Medicare's Hospital Insurance Trust Fund off-budget as well in 1993. The Balanced Budget Act nevertheless requires that the total deficit--including off-budget items--be used when calculating required deficit reductions, because the total deficit determines the government's demands on credit markets. All other trust funds are on-budget.

Trust funds vary greatly in size and importance: Social Security will spend about $220 billion in 1988, while many small funds, such as the Harry S Truman Scholarship Fund, spend less than $1 million annually. Trust funds also vary in their source of funding. Social Security, the Hospital Insurance portion of Medicare, and Unemployment Insurance derive most of their funding from payroll taxes, while the airport and highway funds receive excise tax collections on airline tickets and motor fuels. Medicare's Supplementary Medical Insurance program gets about one-fourth of its funds from voluntary premiums and the rest from general revenues. Civil Service Retirement collects funds from employee contributions, agency matching contributions, and general funds; Military Retirement, a noncontributory program, is funded from the Defense Department budget and general funds.

An important source of funds for most trust funds is interest earned on their holdings of government securities, which is expected to increase from $45 billion in 1988 to $90 billion in 1993. In essence, when trust funds run surpluses, the Treasury borrows the money and issues securities to the trust funds in lieu of borrowing in the credit markets. In the future, these securities will give the trust funds the right to spend more than they take in--for example, during economic downturns or adverse demographic trends. One measure of funding adequacy for trust funds is the ratio of fund balances to expected spending needs. At the start of 1993, Social Security's balances will stand at about 118 percent of annual outlays, Hospital Insurance at about 150 percent, and the Airport and Airways fund at more than 450 percent.

Legislation that reduces outlays or raises taxes for trust fund programs helps to reduce the federal deficit. Thus, for example, the Social Security solvency package of 1983 and the Medicare provisions that have appeared in almost every reconciliation bill since 1982 have held down the deficit. In this respect, programs financed by trust funds are no different from other federal government programs. But a key difference is that such actions contribute to growing trust fund surpluses. Ultimately, large surpluses may lead to pressure to raise spending or cut taxes for particular programs. Conversely, the prospect of depleting trust funds has generally led legislators to reduce outlays or raise taxes.

Trust Fund	Annual Surpluses						Investments (End of 1993)
	1988	1989	1990	1991	1992	1993	
Social Security	37	46	58	71	81	97	456
Medicare	15	17	16	16	16	16	153
Military Retirement	14	15	16	17	18	19	130
Civilian Retirement	18	19	20	22	23	24	306
Unemployment	6	4	1	3	2	1	46
Highway and Airport	3	3	3	3	3	3	40
Other	3	1	2	1	1	2	57
Total Surplus	97	106	116	132	144	161	1,188
Federal Funds Deficit	254	282	283	290	295	295	
Total Deficit	157	176	167	158	151	134	

TABLE II-9. BUDGET FINANCING AND DEBT (By fiscal year)

	1987 Actual	1988 Base	Projections 1989	1990	1991	1992	1993
Borrowing (In billions of dollars)							
On-Budget Deficit	170	195	222	225	229	232	231
Off-Budget Surplus	20	37	46	58	71	81	97
Total Deficit	150	157	176	167	158	151	134
Means of Financing Other Than Borrowing	a/	-13	-1	-1	-2	-1	-1
Borrowing from the Public	151	144	175	166	155	150	133
Debt Outstanding (In billions of dollars)							
Debt Held by the Public	1,897	2,041	2,216	2,382	2,537	2,687	2,820
Debt Held by Government Accounts	457	557	663	781	914	1,059	1,222
Total, Gross Federal Debt	2,354	2,598	2,880	3,163	3,452	3,746	4,041
Debt Subject to Statutory Limit	2,336	2,592	2,879	3,168	3,456	3,750	4,045
As a Percentage of GNP							
Debt Held by the Public	43.0	43.6	44.5	44.7	44.6	44.2	43.4

SOURCE: Congressional Budget Office based on data from the Department of the Treasury.

a. Less than $500 million.

Offsetting Receipts

Offsetting receipts include certain business-type and intragovernmental transactions that are recorded as negative outlays. Unlike revenues, they do not result from the federal government's taxing power. As shown in Table II-7, offsetting receipts rise from $55 billion in 1988 to $69 billion in 1993. Over half of offsetting receipts are intragovernmental, reflecting payments made by federal agencies to retirement funds on behalf of their employees. (The agencies' costs are included in defense or nondefense discretionary spending, and the offsetting receipts category reflects the offset to ensure that there is no net effect on the deficit.) The remaining offsetting receipts come from the public. The largest source--Medicare premiums--represents payments from enrollees in the Supplementary Medical Insurance program and from some otherwise ineligible enrollees in Hospital Insurance. Medicare premiums grow from $9 billion in 1988 to $13 billion in 1993. Other receipts from the public include payments from oil, timber, and mineral leases, proceeds from selling electric power, and similar transactions. One-time savings boosted offsetting receipts in 1987 by more than $3 billion from the sale of Conrail and the early release of disputed Outer Continental Shelf escrows.

BASELINE REVENUE PROJECTIONS

Baseline revenues are projected to reach $897 billion in 1988 and increase to $953 billion in 1989 (see Table II-10). Revenues will claim a higher share of GNP in 1988 and 1989--19.2 percent and 19.1 percent, respectively--than in any year since 1982, except for the special case of 1987 (see Figure II-2). Revenues in fiscal year 1987 were significantly boosted by two factors related to the 1986 Tax Reform Act that affected calendar year 1986 tax liabilities: the realization of extraordinary amounts of capital gains in late 1986 prompted by the pending increase in the tax rate in January 1987, and the retroactive component of the repeal of the investment tax credit. These two sources added nearly $25 billion to 1987 receipts and raised the revenue share of GNP by 0.6 percent, to 19.4 percent.

Even with the tax increases enacted at the end of the last session, revenues in 1988 are projected to rise only 5 percent over 1987. Revenue growth in 1988 is modest for two reasons: first, because it is measured relative to 1987 revenues that were significantly increased by tax reform; and second, because of a pronounced slowdown in economic growth expected in the first half of the year. Revenues increase about 6 percent in 1989 as income growth gets back on track, and almost 9 percent in 1990 when another Social Security tax rate increase goes into effect. Growth then averages about 7 percent in 1991 through

TABLE II-10. CBO BASELINE REVENUE PROJECTIONS BY SOURCE
(By fiscal year)

Major Source	1987 Actual	1988 Base	Projections 1989	1990	1991	1992	1993
			In Billions of Dollars				
Individual Income	393	390	415	454	494	533	574
Corporate Income	84	99	107	119	126	130	134
Social Insurance	303	330	352	380	407	433	464
Excise	33	34	34	35	33	33	33
Estate and Gift	7	8	8	8	8	8	9
Customs Duties	15	16	17	18	20	21	23
Miscellaneous	19	20	21	22	23	24	24
Total	854	897	953	1,036	1,112	1,181	1,262
			As a Percentage of GNP				
Individual Income	8.9	8.3	8.3	8.5	8.7	8.8	8.8
Corporate Income	1.9	2.1	2.1	2.2	2.2	2.1	2.1
Social Insurance	6.9	7.1	7.1	7.1	7.2	7.1	7.1
Excise	0.7	0.7	0.7	0.7	0.6	0.5	0.5
Estate and Gift	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Customs Duties	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Miscellaneous	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total	19.4	19.2	19.1	19.4	19.5	19.4	19.4

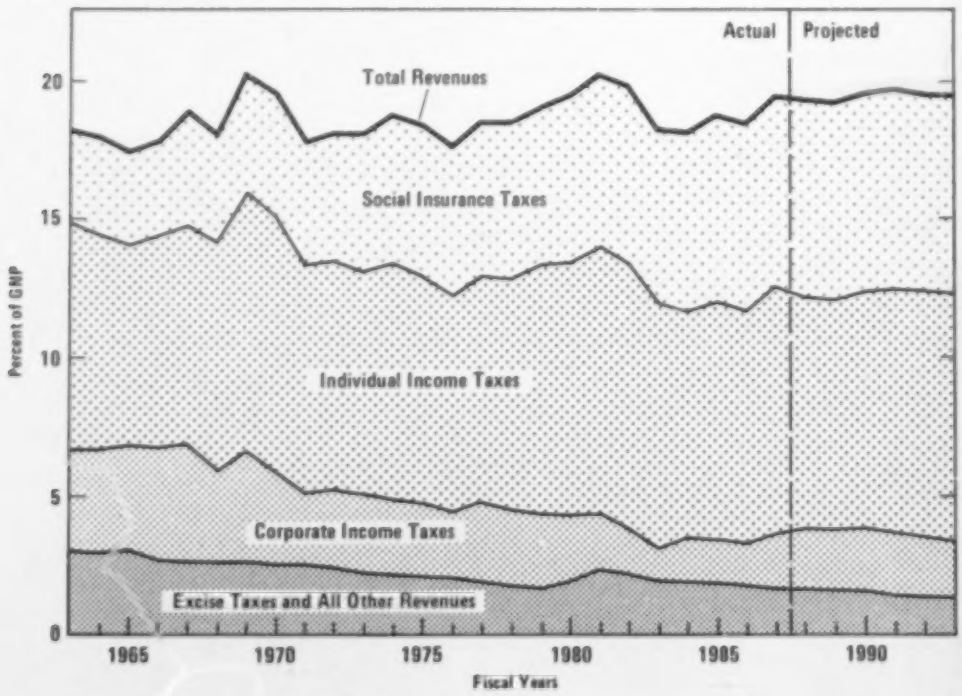
SOURCE: Congressional Budget Office.

1993. The revenue share of GNP rises to 19.4 percent by 1990 and stays there through 1993.

Revenues and the Economy

With 80 percent of federal taxes based directly on personal income and another 11 percent based on corporate income, the outlook for revenues is closely tied to assumptions about overall economic activity and the income it generates. Of the major taxable incomes, wages and salaries total roughly half of GNP, other taxable personal income (such as interest and self-employment income) roughly 20 percent, and economic profits another 6 percent.

Figure II-2.
Revenues by Source as Shares of GNP



SOURCE: Congressional Budget Office.

As discussed in Chapter I, CBO projects a marked slowing of economic growth in the first half of this year, with real GNP growing only 1.8 percent in 1988 (measured from fourth quarter to fourth quarter). Real GNP growth returns to 2.6 percent in 1989, and CBO's long-range assumptions posit continued growth of 2.6 percent to 2.7 percent after 1989.

Wage and salary growth is projected by CBO to drop significantly below trend during the first half of 1988 but to move back to a healthy rate by the end of the year. For 1988 as a whole, economic profits fall below the 1987 level. Incomes are assumed to grow steadily after 1988. Personal income, both wages and salaries and other income, exhibit the strongest growth. Economic profits resume growing, but at a moderate rate by historical standards.

The Effects of Legislation on Revenues

Many changes in tax law, some of which were enacted several years ago, are scheduled to take effect in 1988 through 1993 and therefore affect the revenue projections. Legislated changes in Social Security tax rates, continued base broadening (including the recent tightening in accounting rules for businesses), and extension of the telephone excise and the Federal Unemployment Tax Act (FUTA) taxes add significantly to revenues in 1988 through 1993. Nevertheless, some of the scheduled changes will help to stimulate the economy. The second (and final) step in the reduction of income tax rates under the Tax Reform Act took effect in January. This significant reduction in liability follows last year's tax reform-induced surge in revenues, and helps to spur the economy in 1988 (see Table II-11).

Recent Legislation: The Budget Summit. The Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), enacted after the fall budget summit agreement, met the negotiators' targets for revenue increases. The act raises revenues by $9 billion in 1988 and $14 billion in 1989. The revenue gain peaks at $15 billion in 1990 and tapers off thereafter as some of the provisions expire (see Table II-11).

Roughly half of the revenue raised in the reconciliation act comes from higher corporate income taxes. Another quarter of the tax increases in the first three years comes from excise taxes, mainly the

extension of the telephone excise tax through 1990. A variety of personal tax provisions account for the rest of the law's revenue increases.

The budget summit also called for stepped-up enforcement by the Internal Revenue Service (IRS). In response, the continuing resolution (Public Law 100-202) increased funding for the IRS up to the level requested by the President last January. These funds enable the IRS to add nearly 8,000 new staff positions--primarily tax examiners and collections staff--and to purchase new equipment. These extra resources are expected to yield $2 billion to $3 billion per year.

TABLE II-11. REVENUE EFFECTS OF MAJOR LEGISLATION
(By fiscal year, in billions of dollars)

	1987	1988	1989	1990	1991	1992	1993
Legislation Enacted in 1987							
Omnibus Budget Reconciliation Act of 1987	--	9	14	15	14	11	8
Other (Mostly increased IRS appropriation)	--	2	2	2	2	3	3
Previously Enacted Legislation							
Tax Reform Act of 1986	22	-10	-16	-4	3	3	4
Social Security Rate Increase Effective January 1, 1988	--	10	14	15	17	18	19
Social Security Rate Increase Effective January 1, 1990 a/	--	--	--	5	7	7	8

SOURCE: Congressional Budget Office.

a. Includes income tax effects of deductibility of Self-Employed Contributions Act taxes.

Legislation enacted last fall also increased and reclassified some user fees that previously appeared on the revenue side of the budget. Customs user fees and Nuclear Regulatory Commission fees now appear as offsetting receipts. This change has no effect on the deficit.

Previous Legislation. Legislation enacted before 1987 also affects the 1988-1993 revenue projections, as shown in Table II-11.

The Tax Reform Act of 1986 included several provisions that were phased in over two or more years. Rate reductions for both individuals and corporations were instituted in two steps. For individuals, starting in 1988 the rate schedule includes only the 15 percent and 28 percent brackets, with the 15 percent bracket phased out for upper-income taxpayers. Standard deductions are bigger in 1988: $5,000 for joint returns ($3,000 for single) versus $3,760 for joint returns ($2,540 for single) in 1987. For corporations, the statutory rate dropped to 34 percent in July 1987, making 1988 the first full year at the lower rate. Measured at annual rates, these reductions in individual and corporate tax rates decrease liabilities by about $30 billion. Base-broadening measures and other changes partly offset these reductions and shrink the fiscal year 1988 revenue loss to $10 billion.

An increase of 0.72 percent (employer plus employee) in the Social Security tax rate, enacted in 1983, took effect on January 1, 1988. A further 0.28 percent (employer plus employee) increase, also enacted in 1983, takes place in 1990. Tax increases for the self-employed occur on the same dates. As Table II-11 shows, the scheduled Social Security increases will raise large amounts of revenue and will add to the trust fund's surpluses.

Changes in the Revenue Estimates Since August

Baseline revenues for fiscal years 1988 through 1992 estimated by CBO last August were used as a starting point by the budget summit negotiators in November. Legislation enacted in December raises revenues in each year, while the new economic assumptions and other revisions reduce revenues below the levels projected last August. On balance, these changes leave revenues in 1988 through 1990 at almost the same levels as projected by CBO last summer, but reduce revenues in 1991 and 1992 (see Table II-5).

The revenue effects of the reconciliation bill and the continuing resolution were discussed above. Changes in the economic assumptions and other revisions since last August are discussed below.

Changed Economic Conditions. CBO now forecasts much slower growth during the first half of 1988, followed by healthy growth in personal incomes but only moderate growth in profits. Nominal GNP is lower in all years. These revised economic assumptions cause revenues to fall below the August projections in all years: a reduction of $12 billion in 1989 and $20 billion in 1992 (see Table II-5).

Even as growth resumes in the second half of 1988, total wages and salaries remain below last August's forecast through 1992, reducing individual income taxes and social insurance revenues. Other personal income exceeds last August's estimates after 1988, adding to revenues.

Last year's extraordinary turbulence in financial markets--particularly the stock market crash and subsequent end of the stock market boom, at least for now--affects the revenue outlook. Capital gains are now projected at levels below those expected last August, when the stock market boom showed no clear signs of slowing. This development lowers projected revenues for 1989 and beyond. Revenues in 1988, however, are expected to benefit from the burst of gains realized in transactions in the recently volatile market.

Projected economic profits are well below last August's assumptions, and the drop is expected to be reflected in taxable profits. As a result, corporate income taxes are lower by $7 billion in 1989 and by somewhat larger amounts thereafter.

Other Revisions. Newly available information from tax returns and ongoing research are factored into the revenue baseline and result in further revisions. In total, these technical reestimates reduce revenues below last August's projections by about $5 billion in each year (see Table II-5).

One such revision affects the estimated revenue gains from the new accounting rules enacted in the Tax Reform Act, particularly those rules governing the capitalization of production costs. These

revisions lower the share of production costs incorporated into inventory values under the new rules, thereby increasing business deductions for tax purposes and lowering revenues.

Revisions in the estimated timing of tax payments and other tax-related behavior, such as the realization of capital gains, are also classified as technical reestimates (distinguishing them from changes in tax liability related to changes in income). New data for 1986 and 1987 indicate that realizations of capital gains at the end of 1986 exceeded CBO's August estimate. A portion of the higher 1986 realizations is assumed to have been borrowed from 1988 and 1989, reducing revenues slightly in those years.

BASELINE CREDIT PROJECTIONS

The federal government affects the allocation of credit by borrowing to finance deficits, by regulation, by lending money directly, and by guaranteeing loans extended by others. The credit budget summarizes these last two activities.

The credit budget supplements the unified budget's description of direct lending. The budget generally shows direct lending on a cash-flow basis; that is, it reflects loans disbursed and repayments collected. Thus, programs with huge volumes of transactions may show very small net outlays. The credit budget shows the amount of gross lending by these same programs. Direct loan obligations are expected to total $37 billion in 1988, as shown in Table II-12, with the Commodity Credit Corporation accounting for much of the total. The Farmers Home Administration, the Rural Electrification Administration, and the Export-Import Bank also account for large volumes of direct lending. For future years, the baseline assumes that direct loan programs subject to annual loan limits in appropriation bills are adjusted for inflation; projections of programs without such limits represent CBO's best estimate of loan demand. Direct lending totals $34 billion in 1993, assuming no change in current policies.

Commitments for guaranteed loans total $167 billion in 1988 and $185 billion in 1993; housing loan guarantees by the Federal Housing Administration and the Veterans Administration dominate this

activity. Other major loan guarantors include the Guaranteed Student Loan program and the Export-Import Bank.

Both CBO and the Administration have long argued that current budgetary treatment paints a misleading picture of federal credit activity. Cash-based accounting of direct loans--that is, counting as outlays new loans minus repayments--obscures the subsidy value of credit programs, which generally lend money at favorable rates or to riskier clients. Cash-based accounting also permits asset sales and loan prepayments to count as deficit reductions when these actions depress budget totals only temporarily. The budget records outlays for guaranteed loans only in the event of default, while counting any guarantee fees immediately. In the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987, the Congress asked CBO to study the budget's treatment of credit programs, and CBO will issue a report later this year.

TABLE II-12. CBO BASELINE CREDIT PROJECTIONS
(By fiscal year, in billions of dollars)

Credit Activity	1988 Base	Projections				
		1989	1990	1991	1992	1993
Direct Loan Obligations						
Commodity Credit Corporation	16	15	14	13	12	12
Other	21	20	20	21	21	22
Subtotal	37	35	34	34	33	34
Primary Loan Guarantees						
Federal Housing Administration and Veterans Administration	90	80	90	99	109	117
Other	40	31	32	33	33	34
Subtotal	130	111	122	132	142	151
Total	167	146	156	166	175	185

SOURCE: Congressional Budget Office.

APPENDIXES

APPENDIX A

ANALYSIS OF CONGRESSIONAL BUDGET ESTIMATES

The first (and, since fiscal year 1986, the only) Congressional budget resolution is adopted in late spring or early summer. The resolution is a plan for guiding spending and taxing decisions for the fiscal year beginning the following October. Subsequent authorization and appropriation action is required to turn the plan into law. In fiscal years 1976 through 1979, the actual deficit at the end of the year turned out to be lower than the first budget resolution estimate. Since 1980, however, the actual deficit has consistently exceeded the planned amount.

In its August 1987 report, *The Economic and Budget Outlook: An Update*, the Congressional Budget Office analyzed the sources of error in budget resolution estimates during the 1980s. The figures for 1987 were preliminary, however, because the fiscal year was not yet over. This appendix updates the major tables in CBO's August report to reflect the final data on revenues and outlays for fiscal year 1987.

Table A-1 shows the budget resolution estimates of outlays, revenues, and the deficit and compares them with the actual outcomes. The budget resolution estimates are predicated on three types of assumptions:

- Policy assumptions, which specify the laws and administrative practices that are expected to apply--for some programs, those currently in force; for others, some proposed departure.
- Economic assumptions affecting revenues and spending; these include dozens of variables, but most importantly income and employment, inflation, and interest rates.
- Technical assumptions, which encompass all the remaining statistical and judgmental techniques used to turn the policy and economic assumptions into budget estimates.

TABLE A-1. CONGRESSIONAL BUDGET RESOLUTIONS AND ACTUAL BUDGET TOTALS
(In billions of dollars)

Fiscal Year	Revenues	Outlays	Surplus or Deficit (-)
Fiscal Year 1976			
First resolution	298.2	367.0	-68.8
Second resolution	300.8	374.9	-74.1
Actual	299.2	364.8	-65.6
Fiscal Year 1977			
First resolution	362.5	413.3	-50.8
Second resolution	362.5	413.1	-50.6
Third resolution	347.7	417.5	-69.8
Third resolution amended	356.6	409.2	-52.6
Actual	356.9	401.9	-45.0
Fiscal Year 1978			
First resolution	396.3	461.0	-64.6
Second resolution	397.0	458.3	-61.3
Actual	401.1	449.9	-48.8
Fiscal Year 1979			
First resolution	447.9	498.8	-50.9
Second resolution	448.7	487.5	-38.8
Revised second resolution	461.0	494.5	-33.4
Actual	465.9	493.7	-27.7
Fiscal Year 1980			
First resolution	509.0	532.0	-23.0
Second resolution	517.8	547.6	-29.8
Revised second resolution	525.7	572.7	-47.0
Actual	520.1	579.6	-59.6
Fiscal Year 1981			
First resolution	613.8	613.6	0.2
Second resolution	605.0	632.4	-27.4
Revised second resolution	603.3	661.4	-58.0
Actual	602.6	660.5	-57.9
Fiscal Year 1982			
First resolution	657.8	695.4	-37.6
Revised second resolution	628.4	734.1	-105.7
Actual	617.8	728.4	-110.7

(Continued)

TABLE A-1. (Continued)

Fiscal Year	Revenues	Outlays	Surplus or Deficit (-)
Fiscal Year 1983			
First resolution	665.9	769.8	-103.9
Revised second resolution a/	604.3	807.4	-203.1
Actual	600.6	796.0	-195.4
Fiscal Year 1984			
First resolution b/	679.6	851.2	-171.6
Revised second resolution	672.9	845.6	-172.7
Actual	666.5	841.8	-175.3
Fiscal Year 1985			
First resolution c/	750.9	932.0	-181.2
Revised second resolution c/	736.5	935.9	-199.4
Revised second resolution d/	736.5	946.3	-209.8
Actual c/	734.1	936.8	-202.8
Actual d/	734.1	946.3	-212.3
Fiscal Year 1986			
First resolution	795.7	967.6	-171.9
Actual	769.1	989.8	-220.7
Fiscal Year 1987			
First resolution	852.4	995.0	-142.6
Actual	854.1	1,002.9	-148.8
Fiscal Year 1988			
First resolution e/	921.6	1,055.4	-133.8

SOURCE: Congressional Budget Office.

NOTE: Actual totals have been adjusted where necessary to agree with the budgetary treatment of various items for the budget resolutions and may, therefore, differ from the totals shown elsewhere in this report. Data for fiscal year 1984 and earlier years exclude outlays (primarily Federal Financing Bank, Strategic Petroleum Reserve, and Postal Service) that were considered off-budget before enactment of the Balanced Budget and Emergency Deficit Control Act of 1985.

a. Outlays exclude amounts reserved pursuant to section 2 of the Congressional Budget and Impoundment Control Act.
b. Adjusted for enactment of reserve fund programs.
c. On-budget only; see note.
d. On- and off-budget combined; see note.
e. Using CBO assumptions of February 1987.

Table A-2 divides the differences between the budget resolution estimates of revenues, outlays, and the deficit and the actual outcomes for fiscal years 1980 through 1987 into those resulting from policy, economic, and technical assumptions. Tables A-3, A-4, and A-5 provide further details on the three sources of error.

TABLE A-2. SOURCES OF DIFFERENCES BETWEEN ACTUAL BUDGET TOTALS AND FIRST BUDGET RESOLUTION ESTIMATES FOR FISCAL YEARS 1980-1987
(In billions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	Average Difference	Average Absolute Difference
Revenues										
Policy Assumptions	6.2	-3.7	13.0	-4.6	-13.7	-0.2	-1.5	22.1	2.2	8.1
Economic Assumptions	8.4	5.0	-51.9	-58.0	4.5	-20.0	-23.0	-27.0	-20.3	24.7
Technical Assumptions	-3.5	-12.6	-1.1	-2.7	-3.9	3.3	-2.1	6.7	-2.0	4.5
Total Differences	11.1	-11.2	-40.0	-65.3	-13.1	-16.8	-26.6	1.7	-20.0	23.2
Outlays										
Policy Assumptions	19.6	24.5	1.2	17.6	1.5	22.8	14.2	6.8	13.5	13.5
Economic Assumptions	12.4	6.4	24.1	0.5	7.1	-5.2	-12.1	-11.9	2.7	10.0
Technical Assumptions	15.6	16.0	7.7	8.1	-18.0	-12.9	20.1	13.0	6.2	13.9
Total Differences	47.6	46.9	32.9	26.2	-9.4	4.8	22.2	7.9	22.4	24.7
Deficit										
Policy Assumptions	13.4	28.2	-11.8	22.2	15.2	23.0	15.7	-15.3	11.3	18.1
Economic Assumptions	4.0	1.4	76.0	58.5	2.7	14.8	10.9	15.1	22.9	22.9
Technical Assumptions	19.1	28.6	8.8	10.8	-14.1	-16.2	22.2	6.3	8.2	15.8
Total Differences	36.6	58.1	73.0	91.5	3.7	21.6	48.8	6.2	42.4	42.4

SOURCE: Congressional Budget Office.

TABLE A-3. POLICY DIFFERENCES BETWEEN ACTUAL BUDGET TOTALS AND FIRST BUDGET RESOLUTION ESTIMATES FOR FISCAL YEARS 1980-1987 (In billions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	Average Difference	Average Absolute Difference
Revenues										
Revenues	6.2	-3.7	13.0	-4.6	-13.7	-0.2	-1.5	22.1	2.2	8.1
Outlays										
National Defense	5.9	4.5	-3.9	2.6	-0.7	0.9	-0.8	0.7	1.2	2.5
Entitlements										
Farm price supports	0.8	0.3	-1.7	1.7	--	2.6	5.8	3.3	1.6	2.0
Medicare	1.8	1.3	-0.1	1.6	0.3	--	0.4	-1.6	0.5	0.9
Social Security	-1.3	-0.2	5.1	-0.4	--	-0.1	--	--	0.4	0.9
Unemployment compensation	1.8	1.4	--	5.9	1.3	0.2	-0.1	a/	1.3	1.3
Public housing financing	--	--	--	--	1.0	13.9	0.9	--	2.0	2.0
Means-tested programs	1.8	0.8	-0.1	1.1	-0.3	--	-0.3	a/	0.4	0.6
Other	2.1	3.5	-0.2	a/	0.3	0.2	0.1	0.8	0.8	0.9
Subtotal	6.9	7.1	3.1	9.9	2.7	16.8	6.8	2.6	7.0	7.0
Nondefense Discretionary	5.8	9.9	1.1	5.7	-2.0	1.2	2.3	2.2	3.3	3.8
Net Interest										
Debt service	0.8	2.3	-1.7	1.0	0.7	1.2	0.9	-0.6	0.6	1.1
Other	--	0.4	0.9	-3.2	a/	a/	-1.7	--	-0.4	0.8
Subtotal	0.8	2.7	-0.8	-2.2	0.7	1.3	-0.9	-0.6	0.1	1.2
Offsetting Receipts	0.1	0.3	1.7	1.6	0.8	2.6	6.7	1.9	2.0	2.0
Total	19.6	24.5	1.2	17.6	1.5	22.8	14.2	6.8	13.5	13.5
Deficit										
Deficit	13.4	28.2	-11.8	22.2	15.2	23.0	15.7	-15.3	11.3	18.1

SOURCE: Congressional Budget Office.

a. Less than $50 million.

TABLE A-4. ECONOMIC DIFFERENCES BETWEEN ACTUAL BUDGET TOTALS AND FIRST BUDGET RESOLUTION ESTIMATES FOR FISCAL YEARS 1980-1987 (In billions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	Average Difference	Average Absolute Difference
Revenues										
Individual Income	4.4	10.8	-13.1	-18.5	5.3	-7.2	-11.6	-4.4	-4.3	9.4
Corporate Income	2.8	-4.4	-13.8	-16.4	-4.7	-7.0	-6.6	-18.7	-8.6	9.3
Social Insurance	-0.8	0.6	-10.8	-12.4	0.1	-3.9	-2.3	-1.8	-3.9	4.1
Windfall Profits	--	-5.4	-14.2	-8.4	-1.1	-0.7	-2.8	-2.3	-4.4	4.4
Other	2.0	3.4	--	-2.3	4.8	-1.2	0.3	0.2	0.9	1.8
Total	8.4	5.0	-51.9	-58.0	4.5	-20.0	-23.0	-27.0	-20.3	24.7
Outlays										
Entitlements										
Medicare	0.5	0.1	-0.2	-0.8	-0.3	--	--	--	-0.1	0.2
Guaranteed Student Loans	0.4	0.8	0.2	-0.5	0.8	-0.5	-0.5	-0.5	a/	0.5
Indexed retirement and disability programs	3.7	1.3	-1.5	-1.9	--	0.5	-1.9	-1.4	-0.1	1.5
Unemployment compensation	1.3	-0.2	5.2	3.3	-5.8	1.7	a/	-0.1	0.7	2.2
Medicaid, Food Stamps, and public assistance	0.8	0.6	1.1	0.4	-0.3	-0.2	-0.5	-0.3	0.2	0.5
Other	--	0.4	--	0.1	-0.1	--	0.1	a/	0.1	0.1
Subtotal	6.7	3.0	4.9	0.6	-5.6	1.4	-2.8	-2.3	0.7	3.4
Nondefense Discretionary	--	0.1	0.1	0.1	0.3	a/	a/	a/	0.1	0.1
Net Interest										
Interest rates	5.5	2.8	12.4	-4.2	12.3	-7.9	-10.3	-11.0	a/	8.3
Debt service	0.2	0.6	6.7	4.0	0.2	1.3	0.8	1.1	1.9	1.9
Subtotal	5.8	3.4	19.1	-0.2	12.5	-6.6	-9.5	-9.9	1.8	8.4
Offsetting Receipts	--	--	--	--	--	--	0.3	0.3	0.1	0.1
Total	12.4	6.4	24.1	0.5	7.1	-5.2	-12.1	-11.9	2.7	10.0
Deficit										
Deficit	4.0	1.4	76.0	58.5	2.7	14.8	10.9	15.1	22.9	22.9

SOURCE: Congressional Budget Office.

a. Less than $50 million.

Actual revenues for 1987 were only $1 billion more than the August estimate and $2 billion more than the budget resolution. Weaker economic growth and other errors in economic assumptions would have caused revenues to fall $27 billion short of the budget resolution estimate. More than offsetting this, however, was a $22 billion gain in revenues caused by tax reform and other legislation not assumed in the budget resolution and an error of $7 billion in technical and other estimating assumptions. Information that has become available since August has allowed some of the technical error to be attributed to economic or policy assumptions, thereby reducing the technical error by $4 billion.

On a basis comparable to the budget resolution, 1987 outlays totaled $1,002.9 billion. This figure exceeds by $0.8 billion the amount reported in the *Final Monthly Treasury Statement* (for fiscal year 1987), which contained an error in outlays for the Federal Crop Insurance Fund. It is $1.7 billion less than the amount to be shown in the current budget, which treats the Thrift Savings Fund and Federal Savings and Loan Insurance Corporation notes differently than the budget resolution.

Outlays in 1987, as adjusted, were $7 billion less than CBO's August estimate. The major difference was in nondefense discretionary spending, which came in $7 billion below the August estimate and $9 billion below the budget resolution. While outlays still exceeded the budget resolution estimate by $13 billion as a result of errors in technical assumptions, the size of the technical estimating errors was substantially less than the $21 billion foreseen in August. Outlay errors resulting from policy and economic assumptions were little changed from the August estimate and, on balance, partly offset the technical errors.

The adjusted deficit for 1987 proved to be $149 billion--$9 billion less than the August estimate and only $6 billion above the budget resolution target. Erroneous economic and technical assumptions together added $21 billion to the deficit, but tax reform and other policy changes subtracted $15 billion. Midway through the fiscal year it had appeared that the deficit would reach $176 billion (as estimated by CBO in February 1987) or more (as various private forecasters contended). In the final analysis, however, the difference between the actual outcome and the budget resolution estimate was the second smallest of the 1980s.

TABLE A-5. TECHNICAL DIFFERENCES BETWEEN ACTUAL BUDGET TOTALS AND FIRST BUDGET RESOLUTION ESTIMATES FOR FISCAL YEARS 1980-1987 (In billions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	Average Difference	Average Absolute Difference
Revenues										
Individual Income	5.7	-3.1	0.1	3.0	-0.5	a/	-3.7	5.8	0.9	2.7
Corporate Income	-8.5	-1.8	2.2	-1.1	-2.5	2.4	-2.3	-5.9	-2.2	3.3
Social Insurance	0.2	-2.4	-0.5	-1.0	-0.1	1.5	1.7	3.2	0.3	1.3
Other Revenue Sources	-0.9	-2.3	1.0	0.3	-0.8	-0.6	2.1	3.6	0.3	1.5
Unallocated by Source	--	-3.0	--	-3.9	--	--	--	--	-0.9	0.9
Accounting Change	--	--	-3.9	--	--	--	--	--	-0.5	0.5
Total	-3.5	-12.6	-1.1	-2.7	-3.9	3.3	-2.1	6.7	-2.0	4.5
Outlays										
National Defense	5.2	1.4	2.7	-4.6	-11.9	-12.4	7.0	2.2	-1.3	5.9
Entitlements										
IMF, exchange stabilization fund and FMS trust fund	-0.3	0.7	0.4	-1.3	0.1	-0.8	-3.0	-0.4	-0.6	0.9
Farm price supports	-1.7	2.3	11.0	10.6	-1.2	2.4	10.3	1.0	4.3	5.1
FDIC and FSLIC	1.3	0.7	-0.8	1.0	1.4	0.2	2.7	4.1	1.3	1.5
Medicare and Medicaid	0.9	4.0	3.8	0.9	-4.0	0.3	1.8	4.6	1.5	2.5
Social Security	-0.9	-1.1	-1.7	2.0	1.1	-0.5	-0.2	-0.8	-0.3	1.0
Unemployment compensation	1.0	-0.3	-0.1	-2.6	-3.0	-0.4	0.3	0.5	-0.6	1.0
AFDC, SSI, and EITC	0.7	1.0	a/	-0.2	1.1	1.1	0.8	0.9	0.7	0.7
Other	0.7	3.1	-0.1	2.3	-0.2	-0.1	0.1	1.0	0.9	1.0
Subtotal	1.7	10.3	12.5	12.6	-4.6	2.1	12.7	10.9	7.3	8.4
Nondefense Discretionary	9.2	5.2	-4.8	-2.5	-2.9	-2.0	-6.0	-9.2	-1.6	5.2
Net Interest										
Debt service	1.2	3.1	a/	-0.1	-2.5	-1.4	0.6	1.0	0.2	1.2
Other	-0.1	0.6	-3.7	-3.5	1.1	2.2	3.5	4.4	0.6	2.4
Subtotal	1.1	3.7	-3.6	-3.6	-1.4	0.9	4.0	5.4	0.8	3.0

(Continued)

TABLE A-5. (Continued)

	1980	1981	1982	1983	1984	1985	1986	1987	Average Difference	Average Absolute Difference
Outlays (Continued)										
Offsetting Receipts										
Timber and mineral receipts	-0.2	0.2	1.3	1.6	0.7	0.2	0.2	0.3	0.5	0.6
OCS receipts	-1.2	-5.1	3.5	3.9	1.7	-0.8	3.2	2.3	0.9	2.7
Other	-0.2	0.3	a/	0.6	0.4	-0.8	-1.1	1.2	a/	0.6
Subtotal	-1.6	-4.6	4.8	6.1	2.7	-1.5	2.2	3.7	1.5	3.4
Accounting Change	--	--	-3.9	--	--	--	--	--	-0.5	0.5
Total	15.6	16.0	7.7	8.1	-18.0	-12.9	20.1	13.0	6.2	13.9
Deficit										
Deficit	19.1	28.6	8.8	10.8	-14.1	-16.2	22.2	6.3	8.2	15.8

SOURCE: Congressional Budget Office.

NOTE: IMF = International Monetary Fund; FMS = Foreign Military Sales; FDIC = Federal Deposit Insurance Corporation; FSLIC = Federal Savings and Loan Insurance Corporation; AFDC = Aid to Families with Dependent Children; SSI = Supplemental Security Income; EITC = Earned Income Tax Credit; OCS = Outer Continental Shelf.

a. Less than $50 million.

The revisions in the 1987 figures have little effect on the conclusions reached in CBO's August report. During the 1980s, Congressional budget resolutions underestimated the actual deficits by an average of $42 billion (instead of the $44 billion estimated in August). Inaccurate economic assumptions are still estimated to account for $23 billion of the average error. The average policy and technical differences are $11 billion and $8 billion respectively, slightly lower than the corresponding differences in the August estimate.

APPENDIX B

METHODOLOGY OF MEDIUM-TERM ECONOMIC PROJECTIONS

To a substantial degree, the Congressional Budget Office medium-term projections covering the years 1990 through 1993 reflect historically normal trend values and relationships among economic series. The projections are therefore unconditional--that is, they do not depend specifically on any policy regime or economic theory, other than being compatible with the results of standard economic growth theory. The main reason for using this procedure is that, as discussed in Appendix C, much uncertainty surrounds six-year economic projections. Given the current imperfect state of knowledge about economic processes, projections based on any finely specified theoretical structure risk being highly inaccurate.

The methods used for the CBO projections are described more fully below. In this discussion, gross domestic product (GDP) and gross national product (GNP) are real (corrected for inflation) unless otherwise noted.

PROJECTING REAL OUTPUT

CBO uses GDP as the basic output variable. GDP is GNP less net service factor income (that is, income earned abroad by U.S. residents less income earned in the United States by nonresidents). GDP is preferred to GNP as a measure of output because employment is more closely related to the domestic measure and projections of net service factor income are especially uncertain at this time.

The CBO projection of GDP reflects the historically typical divergence between potential aggregate supply and actual aggregate demand and focuses on a projection of potential GDP--defined as the level of GDP consistent with a constant (nonaccelerating) rate of inflation. Potential GDP represents an aggregate supply constraint for the economy; trying to produce above that level will result in increases in

the rate of inflation, rather than sustainable increases in real output. The economy does not typically operate at potential, however: on average, actual GDP has historically been 0.5 percent lower than potential GDP. Thus, steady growth beyond 1989 is assumed to narrow the gap between actual GDP and potential GDP until the gap reaches its historical average of 0.5 percent in 1993 (see Table B-1).

GNP is then determined by adding to GDP the projection of net service factor income. The projected GNP that results grows at an average rate of about 2.7 percent per year from 1989 to 1993.

Projecting potential GDP first requires an estimate of historical potential GDP and potential labor force (see Table B-2). The recent trend rate of growth for potential GDP per labor force member (GDP/L) is derived from these estimates and used for the projection. Potential GDP/L summarizes trends in the workweek, composition of output, and productivity by industry. Together with projections of labor force growth made by the Bureau of Labor Statistics (BLS), the trend rate for GDP/L determines the projected growth of potential GDP. This method of estimating potential GDP was described in detail in previous CBO reports.1/

The following equation describes the result of estimating GDP/L using quarterly data available through the third quarter of 1987:

$$\begin{aligned} \ln(GDP/L) = {} & 3.0901 + .0072(T_{53}) + .0237(T_{57}) \\ & + .0200(T_{60}) + .0024(T_{69}) + .0031(T_{73}) \\ & + .0013(T_{80}) + .0110(T_{81}) - .0181(U-U^*), \end{aligned}$$

where the T_is represent separate time trends beginning at the cyclical peaks 1953:II (the second quarter of 1953), 1957:III, 1960:II, 1969:IV, 1973:IV, 1980:I, and 1981:III, and

GDP = real GDP,
L = civilian labor force,
U = civilian unemployment rate,
U* = nonaccelerating-inflation rate of unemployment (NAIRU).

1. Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1988-1992* (January 1987), pp. 147-151, and *The Economic and Budget Outlook: An Update* (August 1987), pp. 97-102.

The equation separates the influences of cyclical factors and trends in summarizing the course of GDP/L. The difference between the actual unemployment rate and the NAIRU (U-U*) represents the influence of cyclical factors. As defined above, potential GDP is the level of GDP at the NAIRU: thus, setting U equal to U* in the equation and solving for GDP/L gives the cycle-free trend level of potential GDP/L. Coefficients on the T_is represent trend exponential growth rates of potential GDP/L during the respective periods between cyclical peaks. To project potential GDP/L, the coefficient of the time trend representing the most recent peak (T_{81}) is used.

The projection has been modified in two ways from that described in earlier CBO reports. First, as can be seen from the coefficient on T_{81}, new data imply that potential GDP/L will grow less rapidly than was estimated in August--at 1.10 percent per year, rather than the earlier estimate of 1.15 percent per year. Second, the current estimate uses the BLS high labor force growth projection rather than the moderate growth projection, since recent labor force growth has typically been higher than the BLS moderate growth projections. As a result, the average 1987-1993 growth rate projected for the potential labor force is 1.34 percent per year. Together these changes imply that the average annual rate of growth for potential GDP from 1987 to 1993 will be 2.46 percent.

TABLE B-1. PROJECTED POTENTIAL GDP AND ACTUAL GDP (In billions of 1982 dollars)

Year	Potential GDP	Actual GDP	Gap (As a percentage of potential GDP)
1987	3,861	3,797	1.6
1988	3,963	3,887	1.9
1989	4,064	3,993	1.8
1990	4,164	4,101	1.5
1991	4,264	4,212	1.2
1992	4,365	4,327	0.9
1993	4,468	4,444	0.5

SOURCE: Congressional Budget Office.

TABLE B-2. ESTIMATES OF POTENTIAL GNP, REAL POTENTIAL GDP, NAIRU, AND THE STANDARDIZED-EMPLOYMENT DEFICIT

Fiscal Years	Potential GNP (In billions of current dollars)	Growth of Real Potential GDP (In percent)	NAIRU (In percent) a/	Standardized-Employment Deficit (-)	
				In Billions of Dollars	As a Percentage of Potential GNP
1956	408	2.6	5.1	2	0.6
1957	435	2.6	5.1	3	0.6
1958	459	2.9	5.0	2	0.4
1959	484	3.1	5.1	-9	-1.9
1960	511	3.2	5.2	3	0.6
1961	535	3.6	5.2	3	0.7
1962	565	3.7	5.3	-3	-0.5
1963	597	3.7	5.4	-1	-0.1
1964	628	3.7	5.5	-5	-0.8
1965	665	3.7	5.6	-3	-0.4
1966	709	3.7	5.6	-11	-1.6
1967	760	3.7	5.6	-17	-2.3
1968	816	3.7	5.6	-35	-4.3
1969	892	3.7	5.6	-8	-0.9
1970	977	3.5	5.6	-7	-0.7
1971	1,061	3.1	5.7	-20	-1.9
1972	1,155	3.1	5.8	-20	-1.7
1973	1,253	3.1	5.8	-22	-1.7
1974	1,398	3.1	5.9	-11	-0.8
1975	1,585	3.0	6.0	-33	-2.1
1976	1,761	3.0	6.0	-46	-2.6
1977	1,976	3.0	6.0	-34	-1.7
1978	2,178	3.0	5.9	-53	-2.4
1979	2,447	3.0	5.9	-40	-1.6
1980	2,734	2.6	5.9	-51	-1.9
1981	3,058	1.9	6.0	-47	-1.6
1982	3,365	2.6	5.9	-51	-1.5
1983	3,594	2.7	5.9	-106	-3.0
1984	3,828	2.7	5.8	-131	-3.4
1985	4,050	2.7	5.8	-172	-4.2
1986	4,272	2.7	5.8	-187	-4.4
1987	4,496	2.7	5.7	-117	-2.6
			Projections		
1988	4,761	2.7	5.7	-130	-2.7
1989	5,076	2.6	5.7	-146	-2.9
1990	5,412	2.5	5.6	-140	-2.6
1991	5,762	2.4	5.6	-133	-2.3
1992	6,136	2.4	5.5	-131	-2.1
1993	6,537	2.4	5.5	-120	-1.8

SOURCES: Congressional Budget Office; NAIRU data through 1980 from Robert J. Gordon, *Macroeconomics* (New York: Little, Brown, 1984), pp. xviii-xxi.

NOTE: In 1976, the commencement of the fiscal year was adjusted from July 1 to October 1. The growth rate in the table for real potential GDP in fiscal year 1977 has been annualized to account for the effect of the transition quarter (1976:III).

a. The NAIRU (nonaccelerating-inflation rate of unemployment) was referred to in some previous CBO publications as the stable inflation rate of unemployment.

PROJECTING PRICES AND INTEREST RATES

The GNP deflator is projected to grow at 4.1 percent from 1989 through 1993. This is nearly equal to its average rate of inflation since 1950 of 4.3 percent and equal to its rate in 1989, the last year of the forecast period. Unlike the GNP deflator, the Consumer Price Index (CPI) contains the price of imports. Given the projected trend decline in the foreign exchange rate of the dollar, the CPI is projected to rise 4.4 per- cent per year, more rapidly than the GNP deflator.

Interest rates were determined by assuming that the rate on 91-day Treasury bills after adjusting for CPI inflation would revert to 1.5 percent, which is approximately its average value since the inception of floating exchange rates in the early 1970s.2/ Given CPI inflation, the nominal bill rate falls to 5.9 percent by 1993. In turn, it was assumed that by 1993, the difference in yield between the bill rate and the 10-year government bond rate would revert to 1.5 percentage points--the average difference that has prevailed since floating exchange rates. This sets the bond rate at 7.4 percent in 1993.

2. The calculation used a CPI series (constructed by CBO) that adjusts the published series to be consistent with revisions made in 1983 in the treatment of housing costs in the CPI.

APPENDIX C

UNCERTAINTY IN ECONOMIC FORECASTS AND PROJECTIONS

The economic forecasts and longer-term projections presented in Chapter I of this report are by nature imprecise, and it is important to examine the likelihood of large differences between the forecasts (and longer-term projections) and the outcomes. The last Congressional Budget Office economic and budget update described CBO's track record in its short-term forecast, and presented a method for evaluating the possibility of error in the forecast of federal revenues resulting from uncertainty in the economic forecast.1/ This appendix updates the evaluation for the fiscal year 1989 forecast, and extends it to the longer-term economic projections.

Inaccurate forecasts of nominal gross national product (GNP) have been by far the largest source of CBO's economic errors in deficit forecasts for the following fiscal year. The next largest source of error is in the forecast of interest rates, which affect federal interest payments. In principle, of course, other types of economic errors could sometimes be important: for example, errors in forecasting the relationship between profits and wages, or the division of GNP growth into price and real components. However, in practice these have not proved as important. (Deficit forecasts can err for reasons unrelated to the economic forecast: for example, technical errors and policy changes that CBO does not try to predict.) For projections beyond the next fiscal year, it seems likely that errors in the projection of real GNP will prove to be more important, since, as discussed in Chapter II, both revenues and expenditures are likely to be about equally affected by movements in broad price indexes.

There is about a two-thirds chance that nominal GNP will not differ by more than about 4.2 percent from the forecasts presented in Chapter I, which corresponds to a possible error of about $49 billion in

1. Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1987).

the deficit forecast for fiscal year 1989. The uncertainty of the real GNP projection for fiscal year 1993 is substantially larger (about 7 percent of GNP), and the probability that real GNP will not differ by more than 7 percent from the projected value is also about two-thirds. This uncertainty corresponds to a possible error of about $125 billion in the deficit.

EVALUATING THE UNCERTAINTY OF THE FISCAL YEAR 1989 FORECAST

The nominal GNP forecasts made by CBO for the fiscal years 1978 through 1987 erred by an average of 2.8 percent of GNP (see Table C-1). Two-thirds of the errors were no greater than 2.8 percent, but in three of the ten years (1981, 1982, and 1983, years of recession and early recovery) the errors were substantially larger. CBO's general performance was similar to that of other forecasters, both in the average size of errors and in the circumstances in which particularly large errors were made.

This retrospective view gives one measure of the past uncertainty of CBO's nominal GNP forecasts, and would also give a good idea of the uncertainty attached to the GNP forecast for fiscal year 1989, if it were known that errors in the future would be similar to those made in this 10-year period. It is hard, however, to base any strong conclusions on only 10 forecasts.

Past errors in CBO's forecasts of nominal GNP for the following fiscal year seem to have a similar pattern to those that would have been made using one of a group of related models known as univariate time-series models.2/ A simple time-series model was therefore used to calculate an independent estimate of possible forecast errors.

The time-series model is a first-order autoregression in the growth of nominal GNP, with moving-average terms at lags of one and two quarters. The uncertainty of the fiscal year 1989 forecast depends both on the uncertainty of the coefficients of the model and on the

2. Ibid., pp. 63-86.

TABLE C-1. FORECAST ERRORS IN THE BUDGET YEAR GNP

Fiscal Year	Government and Private Forecasters					Mechanical Models	
	CBO	OMB	CHASE	DRI	WEFA	Average of 42 a/	ARIMA b/
	Percentage Errors (Forecast Minus Actual as a Percentage of Actual)						
1978	-2.8	-0.3	-4.5	-1.6	-0.7	-4.3	-7.8
1979	-2.8	-1.7	-3.7	-2.9	-1.8	-3.2	-6.9
1980	-0.2	-0.6	-3.4	-1.8	-2.4	0.7	-5.2
1981	-3.1	-3.2	-4.1	-2.5	-3.4	-0.1	-4.8
1982	5.9	5.3	6.2	5.7	6.6	4.5	1.8
1983	6.1	6.4	7.3	6.2	6.8	8.9	2.7
1984	-2.3	-2.6	-1.4	-2.0	-1.4	-2.2	-3.4
1985	2.0	1.4	1.3	0.4	1.7	-1.9	-1.6
1986	-0.1	0.8	-0.6	-1.9	-0.3	1.2	-0.9
1987	2.2	3.0	0.6	-0.1	1.3	4.5	3.4
	Summary Statistics						
Mean Percentage Error							
1978-87	0.5	0.8	-0.2	c/	0.6	0.8	-2.3
1980-87	1.3	1.3	0.7	0.5	1.1	1.9	-1.0
Mean Absolute Percentage Error							
1978-87	2.8	2.5	3.3	2.5	2.6	3.2	3.8
1980-87	2.7	2.9	3.1	2.6	3.0	3.0	3.0

SOURCES: Forecasts are those usually constructed in late January of the previous calendar year. Forecast series for CBO and OMB were obtained from published reports and from unpublished quarterly forecast tables. Other institutional forecasts were obtained from published reports. Complete details of sources were published in CBO, *The Economic and Budget Outlook: An Update* (August 1987), p. 92. Forecasts are compared with the nominal GNP estimate published by the Commerce Department in the November following the close of the fiscal year.

a. This is the average of 42 univariate autoregressive forecasts. See *The Economic and Budget Outlook: An Update* (August 1987), Appendix A.

b. Second-order autoregressive model in the growth of nominal GNP, with moving-average terms at lags of one and two quarters.

c. Less than 0.5 in absolute value.

likely distribution of future events not captured by the model ("innovations"). The 5,000 simulations used to evaluate the overall uncertainty of the forecast took both these sources into account.3/

Errors in nominal GNP forecasts translate into errors in the deficit forecast principally through their impact on revenue estimates. For this reason, an average marginal tax rate (estimated as 23 percent) was used to convert the GNP errors into derived deficit errors.

EVALUATING THE UNCERTAINTY OF THE FISCAL YEAR 1993 PROJECTION

The CBO economic projections for 1993 are not based--as is the short-term forecast--on empirical models of the dynamic behavior of the economy. Instead, the real GNP projections are constructed using limited historical information--typically long-period averages--and clearly defined rules that are described in some detail in Appendix B. Thus, even though CBO does not have a long-enough track record in long-term projections to make evaluation worthwhile, the uncertainty inherent in the current set of procedures can be estimated by examining how those procedures would have fared had they been used for a long period. In this way, a synthetic track record is constructed.

Using the Six-Year Projection Rules to Derive a Synthetic Track Record

The general idea was to simulate six-year projections of real gross domestic product (GDP), in each case comparing the results of the procedure described in Appendix B with the outcome six years later. For each set of projections, the basic GDP per labor force member (GDP/L) regression, which appears in Appendix B, was reestimated using only

3. See unpublished staff working paper, in process, on uncertainty in economic forecasts and projections, which describes the criteria for model selection and the simulation procedures.

the information that would have been available at the time.4/ This pro- vides an estimate of the growth of potential GDP relative to the poten- tial labor force. The projected level of potential GDP was then calcu- lated as the product of projected potential GDP/L and an estimate of the cyclically adjusted labor force (which was assumed to be known in advance). The projected level of real GDP after six years was assumed to differ from potential GDP by the average percentage of GDP from the data available at the time. The exercise was repeated for 95 suc- cessive starting quarters, beginning in the first quarter of 1958, and thus generated a synthetic track record consisting of 95 sets of six- year projection errors.

Strictly speaking, this procedure evaluates only the errors in the projection of GDP/L at the end of the six-year period. Labor force projections are also uncertain. However, it appears that the additional uncertainty in GDP projections arising from this source may be small. This is perhaps because unpredicted shifts in labor force participation seem to have been correlated with unpredicted shifts in the opposite direction in productivity growth, and consequently the two movements tended to cancel each other out.

The deficit uncertainty for 1993 resulting from the uncertainty of real GNP was calculated, once again, under the assumption that the major source of economic errors in deficit projections is the effect of errors in nominal GNP on the calculation of revenues. Thus, real GNP errors were multiplied by the CBO projection of the GNP deflator to convert them to nominal GNP errors, and then revenue errors were calculated using a marginal tax rate of 23 percent, the rate used in the short-term analysis. This calculation yields an estimated uncertainty of the primary deficit (deficit less interest payments) for fiscal year 1993 of about $108 billion in 1993 dollars or $92 billion in 1989 dollars. The calculation is not complete, however: deficit errors for 1993 depend also on the errors for fiscal years 1988 through 1992, since these will affect debt service costs in 1993. Taking into account

4. In the first quarter of 1958 (1958:I), real GDP was assumed to be known through 1957:IV. However, the real GDP for 1957:IV actually reported in early 1958 differs substantially from that now reported by the Bureau of Economic Analysis for the same period, in large part because of conceptual revision and the use of a different price base for real values. Most of these revisions should not, in principle, change long-term deficit projections, and thus the most recently revised data were used consistently. Some revisions, such as those resulting from the incorporation of new data sources, would have changed long-term projections. However, it is not easy to isolate these important revisions.

the uncertainty of real GNP in these intermediate years, and using the CBO projections of interest rates, the uncertainty of the total deficit for fiscal year 1993 rises to about $125 billion in 1993 dollars, or $107 billion in 1989 dollars.

THE IMPRECISION OF UNCERTAINTY ESTIMATES

The discussion above has attempted to give an idea of the degree of confidence that is to be attached to economic projections. Different measures of uncertainty could be emphasized.

In the case of the short-term forecast for nominal GNP in fiscal year 1989, the alternatives are either to rely on the sparse historical record of CBO forecasts--which yields quite a small confidence interval of plus or minus 2.8 percent of GNP--or to use the standard deviation of forecasts from a model. The model used here gives a confidence interval of 4.2 percent of GNP, which is somewhat larger than CBO's historical record of forecasts but might be taken as an indication of the inherent difficulty of forecasting.

The confidence interval for the long-term projection of real GNP for fiscal year 1993 is reported as plus or minus 7 percent, reflecting the whole of the synthetic sample of 95 projections. These projections overlap, however, so the projections are not independent of each other and the sample is not, in fact, very large. As a result, different subsamples yield quite a wide range of estimates of the confidence interval, from about 5 percent to about 10 percent.

The extent of uncertainty implied by the confidence intervals discussed here is similar to that implied by the alternative sets of economic projections that CBO published until recently. For example, in January 1987 the high and low alternative projections implied that nominal GNP in the second calendar year of the forecast would be respectively 2.7 percent above and 9.2 percent below the baseline--a somewhat wider range than the plus or minus 4.2 percent confidence interval proposed in this report for nominal GNP in fiscal year 1989.5/ (The low path included a severe recession, with low inflation.) The

5. *The Economic and Budget Outlook: Fiscal Years 1988-1992* (January 1987), pp. 8 and 9.

same alternative projections called for real GNP after six years to be respectively 9.6 percent above and 6.3 percent below the baseline projection--also a wider range than the plus or minus 7 percent confidence interval proposed in the current baseline projection for real GNP in fiscal year 1993.

APPENDIX D

BASELINE CONCEPTS AND ADJUSTMENTS

The Congressional Budget Office budget baseline is designed to show the pattern federal government revenues and spending would take during the next five years if current policies were continued without change. This appendix describes the baseline concepts behind the revenue and spending projections presented in this report.

Since last year, CBO has modified its baseline definition to conform in most respects to the definition of the budget base in the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177, more commonly referred to as the Balanced Budget Act) as amended by the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (Public Law 100-119, known more briefly as the Balanced Budget Reaffirmation Act). For 1989, the CBO baseline deficit estimate is identical to CBO's estimate used for computing the excess deficit as part of the sequestration process.

This appendix is presented in two sections: the first defines the revenue and spending components of the budget, and the second describes how the baseline projections would differ under alternative assumptions about certain federal programs.

DEFINITION OF THE BUDGET BASELINE

The CBO baseline includes revenues generated under current tax law. Excise taxes dedicated to trust funds scheduled to expire during the projection period are extended at current rates through the end of the period, as specified for the Balanced Budget Act baseline.

Four such extensions are assumed. Airport and Airway Trust Fund taxes are extended beyond their scheduled expiration date of December 31, 1990; Leaking Underground Storage Tank (LUST) Trust Fund taxes and Hazardous Substance (Superfund) taxes are

extended beyond December 31, 1991; and the newly enacted Vaccine Injury Compensation (VIC) Trust Fund taxes are extended beyond December 31, 1992.

The Congress provides funding for certain federal programs directly, in authorization and other substantive legislation. All other federal spending is subject to annual review through the appropriation process.

Direct Spending

Federal programs whose funding is provided in authorization and other legislation constitute the first category of spending; provision for them is considered mandatory in each year's budget. Section 401(c)(2) of the Congressional Budget and Impoundment Control Act of 1974 (Public Law 93-344), as amended by the Balanced Budget Act, recognizes several types of direct spending authority, including permanent appropriations for entitlement programs, such as Social Security and Unemployment Insurance, and for interest on the public debt.

The direct spending category also includes appropriated entitlements, which are funded in annual appropriation acts. Among these are benefit programs such as Medicaid, Supplemental Security Income, Aid to Families with Dependent Children, veterans' compensation and pension spending, and other programs. In the past, the budgetary treatment of these programs has been at issue; the Office of Management and Budget has considered them as appropriations and CBO has treated them as entitlements. The Balanced Budget Reaffirmation Act clarified the treatment, and designated the programs as entitlements. The CBO baseline projects full funding for each program in the 1989-1993 period.

In addition to appropriated entitlements, CBO, OMB, and the House and Senate Budget Committees have developed a common list of appropriations that are considered mandatory for purposes of the Balanced Budget Act. These mandatory appropriations include Food Stamps, child nutrition, and Unemployment Insurance Trust Fund outlays for training and employment services and for administrative expenses.

The baseline projections for direct spending programs represent CBO's current estimate of future spending under the baseline economic assumptions. The CBO baseline concepts for direct spending are consistent with the Balanced Budget Reaffirmation Act, with only three exceptions to the general rule that certain provisions of law providing section 402(c)(2) spending authority expire as scheduled: Food Stamps and Nutrition Assistance to Puerto Rico are extended beyond their scheduled expiration in 1990, Guaranteed Student Loans for new borrowers are extended beyond 1991, and Trade Adjustment Assistance is extended beyond 1991.

Annual Appropriations

Funding for appropriated programs may take the form of current budget authority, limitations on obligations, and limitations on direct loans and loan guarantees. Baseline projections for this type of spending assume constant real funding levels in each year--that is, the base-year funding is raised by amounts that allow for annual price increases. The Balanced Budget Reaffirmation Act specifies that these annual increments are to be derived separately for the nonpersonnel and personnel portions of spending in each program. The nonpersonnel portion is inflated by the economywide change in prices, approximated by the GNP deflator. The personnel portion is inflated by a more complex process that takes into account the impact of pay raises, pay absorption (funding a portion of the increase in pay costs through federal agencies' other appropriations), and the increased retirement costs under the Federal Employees' Retirement System (FERS).

The calculation of these inflators is shown in Table D-1. The level of nonpersonnel budget authority in an appropriated account for fiscal year 1989, for example, is derived by increasing the fiscal year 1988 appropriation by 4 percent, which is CBO's projected 1989 growth rate for the GNP implicit deflator. If the account includes spending for civilian personnel, such as an agency's salary and expense appropriation, the fiscal year 1989 level for that portion would be calculated as follows: the fiscal year 1988 level would be increased by

TABLE D-1. CALCULATION OF INFLATION FACTORS FOR THE PROJECTION OF DISCRETIONARY ACCOUNTS
(By fiscal year)

	1989	1990	1991	1992	1993
Inflating the Nonpersonnel Spending in Each Account					
GNP Deflator					
Annual increase	1.040	1.041	1.040	1.040	1.040
Cumulative increase	1.040	1.083	1.126	1.172	1.219
Inflating the Personnel Spending in Each Account					
Civilian Personnel					
Adjustment for full-year unabsorbed cost of previous pay raise	1.020	1.006	1.006	1.006	1.006
(times)					
Adjustment for budget-year pay raise	1.034	1.035	1.034	1.034	1.034
(times)					
Adjustment for increased FERS costs	1.006	1.006	1.005	1.005	1.005
(equals)					
Annual increase	1.061	1.047	1.045	1.045	1.045
Cumulative increase	1.061	1.111	1.161	1.213	1.268
Military Personnel					
Adjustment for full-year unabsorbed cost of previous pay raise	1.020	1.006	1.006	1.006	1.006
(times)					
Adjustment for budget-year pay raise	1.034	1.035	1.034	1.034	1.034
(equals)					
Annual increase	1.055	1.041	1.040	1.040	1.040
Cumulative increase	1.055	1.098	1.142	1.188	1.236

SOURCE: Congressional Budget Office.

2 percent to adjust for the 1989 cost of the January 1988 pay raise, then by an additional 3.4 percent to account for CBO's projected 4 percent fiscal year 1989 civilian pay raise with a 22 percent pay absorption rate applied to 70 percent of the costs; the result would be increased by 0.6 percent to adjust for the added FERS costs that would accompany the higher pay levels.

In most cases, the level of projected outlays for each account is then calculated by applying an appropriate spendout rate--that is, a measure of how current budget authority is converted into a given year's outlays--and adding any outlays that can be made in the given year from budget authority appropriated in previous years.

The CBO baseline follows this method of calculating inflation for all appropriated accounts except one: additional budget authority is assumed to be provided to cover the extension of subsidized housing contracts (Section 8 Rental Assistance) that expire in 1991 and in later years.

THE EFFECT OF ALTERNATIVE PROGRAM ASSUMPTIONS ON REVENUE AND SPENDING ESTIMATES

The estimates made by CBO for revenues and for certain spending programs over the 1989-1993 period differ slightly from the levels that would have been projected under previous years' baseline concepts.

Under baseline concepts used before the Balanced Budget Reaffirmation Act, revenues earmarked for two trust funds--the Leaking Underground Storage Tank Trust Fund (intended to defray the cleanup costs of environmental pollution from leaking petrochemical storage tanks) and the Vaccine Injury Compensation Trust Fund--would not have been extended at current rates. Both are relatively new programs with no history of legislated extensions, and both provide funding for programs of specified dimensions which will terminate when certain limits are reached. The law provides that LUST taxes will terminate before their scheduled expiration date if cumulative net revenues have reached a total of $500 million. The VIC excise tax provides funding for awards to persons injured by the administration of vaccines; once a maximum number of awards has been made and paid for by the tax, the program will terminate. The extension of these

two trust funds has no effect on revenues before 1991, and quite small effects each year from 1991 through 1993.

The spending projections for a few programs differ slightly from the projections that would have been made under the baseline concepts CBO used prior to the enactment of the Balanced Budget Reaffirmation Act. For several reasons, the base-year (fiscal year 1988) budget authority for these programs does not reflect the amounts needed in future years to continue the trend of current program operations.

For example, unspent funds from previous years or transfers from other programs reduced the base-year funding requirements for certain federal programs. Accordingly, the Congress lowered the appropriations in fiscal year 1988 for these programs. In the budget year and beyond, however, when these prior balances and transfers are not available, additional appropriations would be required to maintain the 1988 program level. The spending levels projected from this temporary reduction in funding therefore underestimate program needs.

In the past, CBO ended or limited spending for another group of programs in future years as authorizations expired or as spending reached ceilings provided in the authorizing legislation. Under the new methodology, the calculation of future budget authority from the base-year values overestimates spending in these programs.

For a third group of programs, the modified baseline concepts yield anomalous projections that ignore significant program characteristics. For example, the baseline projections do not include the expenses involved in conducting the decennial census, and do not reflect the Congress's intent to fill the Strategic Petroleum Reserve at the minimum rate specified in the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509).

Table D-2 shows how projected revenues, budget authority, and outlays would differ if the program changes noted above were incorporated in the CBO baseline. Revenues would not be affected until fiscal year 1991, and thereafter would be reduced by small amounts. Spending would be changed for about 41 out of roughly 1,200 accounts in the CBO baseline; the effect on total outlays would exceed $200 million only in fiscal year 1990, when spending for the decennial census would add $1 billion.

TABLE D-2. EFFECT OF ALTERNATIVE PROGRAM ASSUMPTIONS ON REVENUE AND SPENDING ESTIMATES
(By fiscal year, in billions of dollars)

		1989	1990	1991	1992	1993
Revenues						
Differences Resulting From:						
Expiration of LUST trust fund taxes		--	--	-0.1	-0.1	-0.1
Expiration of VIC trust fund taxes		--	--	--	--	-0.1
Revenue effect, total		--	--	-0.1	-0.1	-0.2
Spending						
Differences Resulting From:						
Availability of prior-year balances (13 accounts)	Budget authority	0.3	0.3	0.3	0.4	0.4
	Outlays	0.1	0.2	0.3	0.3	0.4
Program expirations or ceilings (13 accounts)	Budget authority	-0.1	-0.2	-0.4	-0.4	-0.4
	Outlays	-0.1	-0.5	-0.3	-0.3	-0.3
Program characteristics (15 accounts)	Budget authority	0.2	1.1	a/	-0.1	-0.1
	Outlays	0.1	1.0	a/	-0.1	-0.1
Spending effect, total (41 accounts)	Budget authority	0.5	1.3	a/	-0.2	-0.2
	Outlays	0.2	0.8	0.1	-0.1	a/

SOURCE: Congressional Budget Office.

NOTES: A negative difference implies that the baseline projection would be lower by that amount if the alternative program assumption were used in the CBO baseline; a positive difference implies that the projections would be higher.

LUST = Leaking Underground Storage Tank; VIC = Vaccine Injury Compensation.

a. Less than $50 million.

APPENDIX E

BASELINE SPENDING AND CREDIT PROJECTIONS BY BUDGET FUNCTION

Five broad categories of outlays--defense, entitlements and other mandatory spending, nondefense discretionary spending, net interest, and offsetting receipts--used in the body of this report are designed to reflect the way in which the Congress has approached spending decisions in recent budget resolutions. In this appendix, federal spending and credit projections are classified according to 19 budget functions.

The Congressional Budget Act of 1974, as amended, requires the Congress to include estimates of budget authority, outlays, new direct loan obligations, and new guaranteed loan commitments for each major budget function in its annual budget resolutions. The functional classification is a means of presenting spending estimates in terms of the broad national needs that federal programs are intended to address. Within a function, the programmatic objectives may be achieved in a variety of ways, including spending from Congressional appropriations, loans to private borrowers, and spending from earmarked trust funds.

National needs are grouped into 17 broad budget functions ranging from national defense, international affairs, energy, and agriculture programs to education, health, income security, and general government. The two remaining functions--net interest and undistributed offsetting receipts--do not address national needs but are included to make the budget complete. Two functions--general purpose fiscal assistance to state and local governments, and allowances--are no longer shown separately. General purpose fiscal assistance is now included in the general government function. The cost of future pay raises for federal civilian employees that had been in the allowance function is now distributed throughout the remaining functions in the baseline projections.

Some outlays are excluded from the on-budget totals by law. The Balanced Budget and Emergency Deficit Control Act of 1985 provides that the outlays (and revenues) of the Social Security trust funds are to be excluded from the on-budget aggregates. Outlays for the Social Security retirement, survivors, and disability programs are classified in budget function 650. Most spending in this function--representing the outlays of the Old-Age and Survivors Insurance and Disability Insurance trust funds for benefit payments, administrative expenses, and other miscellaneous costs--is treated as off-budget. Off-budget outlays in net interest (function 900) reflect the interest earned by the Social Security trust funds on their investments in Treasury securities, while the off-budget portion of function 950 (undistributed offsetting receipts) reflects the payroll tax paid by federal government agencies on behalf of workers covered under the program.

Since 1980, Congressional budget resolutions have also included a separate credit budget. The spending budget, which generally operates on a cash-flow basis, cannot accurately reflect the full impact of federal budgetary policies on the allocation of credit in the U.S. economy. In the spending budget, loans are recorded on a net basis--that is, new loans less repayments. Loan guarantees do not appear except in the case of a default. The credit budget remedies some of these shortfalls by presenting the gross amounts of new loans and loan guarantees. Most credit budget activity is concentrated in a few budget functions: international affairs, agriculture, commerce and housing credit, education, and veterans' programs.

The CBO baseline projections for budget authority, outlays, and credit are presented by budget function in Tables E-1, E-2, and E-3, respectively.

TABLE E-1. CBO BASELINE BUDGET AUTHORITY PROJECTIONS BY FUNCTION (By fiscal year, in billions of dollars)

Budget Function		1988 Base	Projections				
			1989	1990	1991	1992	1993
050	National Defense	291	308	320	333	347	361
150	International Affairs	17	19	20	20	21	22
250	General Science, Space, and Technology	11	11	12	12	13	13
270	Energy	6	6	6	6	6	6
300	Natural Resources and Environment	15	16	17	18	19	19
350	Agriculture	24	26	26	23	23	21
370	Commerce and Housing Credit	15	13	14	9	10	8
400	Transportation	28	29	29	30	29	29
450	Community and Regional Development	10	8	8	7	8	8
500	Education, Training, Employment, and Social Services	35	37	38	39	39	41
550	Health	45	51	55	61	67	73
570	Medicare	95	104	114	126	138	152
600	Income Security	169	175	180	217	218	229
650	Social Security						
	On-budget	5	5	5	5	5	6
	Off-budget	252	274	304	334	361	394
	Subtotal	257	280	309	339	366	400
700	Veterans' Benefits and Services	28	29	30	30	31	32
750	Administration of Justice	8	9	9	10	11	11
800	General Government	9	10	11	11	11	12
900	Net Interest						
	On-budget	158	177	199	218	229	240
	Off-budget	-7	-11	-16	-21	-28	-34
	Subtotal	151	166	184	196	201	206
950	Undistributed Offsetting Receipts						
	On-budget	-31	-33	-34	-35	-36	-37
	Off-budget	-4	-5	-5	-6	-6	-7
	Subtotal	-36	-37	-39	-41	-43	-45
On-budget subtotal		938	999	1,059	1,140	1,188	1,244
Off-budget subtotal		240	259	283	307	327	353
Total		1,179	1,258	1,343	1,447	1,516	1,597

SOURCE: Congressional Budget Office.

TABLE E-2. CBO BASELINE OUTLAY PROJECTIONS BY FUNCTION
(By fiscal year, in billions of dollars)

Budget Function		1988 Base	Projections				
			1989	1990	1991	1992	1993
050	National Defense	287	295	306	320	333	345
150	International Affairs	9	17	16	16	17	17
250	General Science, Space, and Technology	11	11	12	12	12	13
270	Energy	3	5	5	4	4	5
300	Natural Resources and Environment	15	16	17	18	18	19
350	Agriculture	22	22	22	21	18	17
370	Commerce and Housing Credit	6	7	7	4	5	3
400	Transportation	27	28	29	30	31	32
450	Community and Regional Development	6	7	7	7	7	7
500	Education, Training, Employment, and Social Services	33	36	37	38	39	40
550	Health	44	49	55	60	66	72
570	Medicare	80	87	98	110	122	136
600	Income Security	131	139	146	154	162	172
650	Social Security						
	On-budget	5	5	5	5	5	6
	Off-budget	214	229	246	263	280	297
	Subtotal	219	234	251	268	285	303
700	Veterans' Benefits and Services	29	29	30	31	31	32
750	Administration of Justice	8	8	9	10	10	11
800	General Government	9	10	10	11	11	11
900	Net Interest						
	On-budget	158	177	199	218	229	240
	Off-budget	-7	-11	-16	-21	-28	-34
	Subtotal	151	166	184	196	201	206
950	Undistributed Offsetting Receipts						
	On-budget	-31	-33	-34	-35	-36	-38
	Off-budget	-4	-5	-5	-6	-6	-7
	Subtotal	-36	-37	-39	-41	-43	-45
On-budget subtotal		852	916	978	1,034	1,086	1,140
Off-budget subtotal		203	213	225	236	246	256
Total		1,055	1,129	1,203	1,269	1,332	1,396

SOURCE: Congressional Budget Office.

TABLE E-3. CBO BASELINE CREDIT PROJECTIONS BY BUDGET FUNCTION (By fiscal year, in billions of dollars)

Budget Function			1988 Base	Projections 1989	1990	1991	1992	1993
150	International Affairs	DL	6	7	7	8	8	8
		PG	15	9	10	10	10	11
270	Energy	DL	3	2	2	2	2	2
		PG	2	a/	a/	a/	a/	a/
300	Natural Resources and Environment	DL	a/	a/	a/	a/	a/	a/
350	Agriculture	DL	18	16	15	14	14	14
		PG	6	6	6	6	7	7
370	Commerce and Housing Credit	DL	4	4	4	4	4	4
		PG	72	64	67	74	80	87
400	Transportation	DL	a/	a/	a/	a/	a/	a/
		PG	a/	0	0	0	0	0
450	Community and Regional Development	DL	1	1	1	1	1	1
		PG	a/	a/	a/	a/	a/	a/
500	Education, Training, Employment, and Social Services	DL	2	2	2	2	2	2
		PG	10	10	10	10	10	10
550	Health	DL	a/	a/	a/	a/	a/	a/
		PG	a/	a/	a/	a/	a/	a/
600	Income Security	DL	a/	0	0	0	0	0
700	Veterans' Benefits and Services	DL	2	2	1	1	1	1
		PG	22	20	26	29	32	34
	Total b/	DL	37	35	34	34	33	34
		PG	130	111	122	132	142	151

SOURCE: Congressional Budget Office.

NOTES: DL = New direct loan obligations.
PG = New primary loan guarantee commitments.

a. Less than $500 million.

b. Direct Loan totals include DL for guarantee claims.

APPENDIX F

FEDERAL RECEIPTS AND EXPENDITURES IN THE NATIONAL INCOME AND PRODUCT ACCOUNTS

Both the budget and the federal sector of the National Income and Product Accounts (NIPA) measure the receipts and expenditures of the federal government. The national income accounts measure current income and production and are the most widely used indicator of current economic activity. As a rule, the NIPA federal sector is more useful than the budget for analyzing the economic impact of federal government activity. The NIPA estimates of federal government activity differ from those of the budget in four ways: timing of transactions, netting and grossing of receipts against spending, treatment of financial activities, and coverage.

Timing differences occur because the budget records transactions (except interest owed to the public) on a cash-paid or cash-received basis, while the NIPA federal sector may use a cash, accrual, or other basis, depending on the type of transaction. On the receipts side, the most important timing difference is the recording of corporate profit taxes in the NIPA at the time the tax liability is incurred, which may be months (or years) before the tax payment is deposited in the Treasury. On the expenditure side, the only major timing difference is that some large defense purchases are recorded in the NIPA at the time of delivery rather than at the time payment is made. Other timing differences are generally small.

Differences in netting and grossing arise because the budget treats certain types of receipts as offsets to outlays. For example, agency payments to the Civil Service Retirement Trust Fund and other federal employee benefit plans are counted as a negative outlay in the budget, exactly offsetting agency expenditures elsewhere. In the NIPA, this amount is added to both receipts and expenditures in order to provide a more accurate measure of personal income and outlays. Other netting and grossing adjustments in the NIPA are made for funds collected by the government in the course of business-type transactions--such as Medicare premiums, timber sales, and rents and royalties arising from the Outer Continental Shelf leases.

Lending and financial transactions that involve only the exchange of existing assets and liabilities are generally excluded from the NIPA, since they generate no current income or output. For example, the sale of a governmental asset such as Conrail reduces the budget deficit but has no effect on the NIPA deficit. Similarly, direct lending by the Small Business Administration and other agencies is reflected in the budget but is excluded from the NIPA. Interest paid or received in the course of financial transactions, though, is reflected in the NIPA federal sector. Moreover, nonrecourse agricultural commodity loans are recorded by the NIPA as purchases of goods rather than lending.

Coverage differences largely reflect the exclusion of Puerto Rico, the Virgin Islands, and other territories for purposes of computing the gross national product and related data series in the NIPA.

The major differences between the budget and the federal sector in the NIPA are detailed in Table F-1. Table F-2 shows estimates of federal sector receipts and expenditures on a NIPA basis, consistent with current CBO baseline budget projections.

As anticipated in CBO's January 1987 baseline report (*The Economic and Budget Outlook: Fiscal Years 1988-1992*), the delay of the final military paycheck of fiscal year 1987 into fiscal year 1988 increased the defense timing adjustment,which measures the difference between the value of goods delivered and cash outlays. Since the federal budget generally records spending transactions on a cash basis, the paycheck's delay into 1988 reduced the 1987 budget deficit. However, employee compensation is recorded on an accrual basis by the NIPA; hence, the pay delay added to the 1987 defense timing adjustment. This decision differs from the tentative Bureau of Economic Analysis approach, which would have allowed the pay delay to reduce NIPA defense purchases in fiscal year 1987.

TABLE F-1. RELATIONSHIP OF THE BUDGET TO THE FEDERAL SECTOR OF THE NATIONAL INCOME AND PRODUCT ACCOUNTS (By fiscal year, in billions of dollars)

	1988 Base	Projections				
		1989	1990	1991	1992	1993
Receipts						
Total Revenues	897	953	1,036	1,112	1,181	1,262
Differences						
Government contributions for employee retirement	38	40	43	45	48	51
Medicare premiums	9	10	11	12	12	13
Other netting and grossing	10	10	11	10	10	11
Geographic exclusions	-3	-3	-3	-3	-3	-3
Other	-4	-1	a/	1	3	3
Total Federal Sector NIPA Receipts	947	1,009	1,097	1,177	1,252	1,337
Expenditures						
Total Outlays	1,055	1,129	1,203	1,269	1,332	1,396
Differences						
Lending and financial transactions	2	-9	-8	-7	-6	-4
Government contributions for employee retirement	38	40	43	45	48	51
Medicare premiums	9	10	11	12	12	13
Other netting and grossing	10	10	11	10	10	11
Defense timing adjustment	5	3	3	3	3	3
Bonuses on Outer Continental Shelf land leases	1	1	1	1	1	1
Geographic exclusions	-6	-6	-7	-7	-7	-8
Other	-5	-3	-2	-3	-3	-3
Total Federal Sector NIPA Expenditures	1,109	1,176	1,256	1,323	1,391	1,460

SOURCE: Congressional Budget Office.

a. Less than $500 million.

TABLE F-2. PROJECTIONS OF BASELINE REVENUES AND EXPENDITURES ON A NATIONAL INCOME AND PRODUCT ACCOUNTS BASIS
(By fiscal year, in billions of dollars)

	1988 Base	Projections				
		1989	1990	1991	1992	1993
Receipts						
Personal Tax and Nontax Receipts	401	424	463	503	542	584
Corporate Profits Tax Accruals	113	126	140	148	152	158
Indirect Business Tax and Nontax Accruals	57	59	62	61	62	65
Contributions for Social Insurance	375	400	432	465	496	531
Total Receipts	947	1,009	1,097	1,177	1,252	1,337
Expenditures						
Purchases of Goods and Services	385	397	413	430	448	466
Defense	293	300	312	327	341	355
Nondefense	92	97	101	104	107	111
Transfer Payments	434	466	504	538	575	614
Grants-in-Aid to State and Local Governments	109	116	122	128	136	144
Net Interest Paid	151	166	183	194	199	203
Subsidies Less Current Surplus of Government Enterprises	30	31	35	33	33	32
Total Expenditures	1,109	1,176	1,256	1,323	1,391	1,460
Deficit						
Deficit	-162	-167	-159	-146	-139	-123

SOURCE: Congressional Budget Office.

APPENDIX G

HISTORICAL BUDGET DATA

The budget policies of the federal government and the role of the budget in the national economy have changed in many ways over the past 26 years. This appendix analyzes some of these changes by examining historical trends in revenues, outlays, and federal debt and comparing them with projected levels. Actual budget data for fiscal years 1962 through 1987, both in nominal dollars and as a percentage of gross national product (GNP), are provided in Tables G-1 through G-8.

Federal revenues, outlays, deficit or surplus, and debt held by the public are shown in Tables G-1 and G-2. Revenues and outlays contain both on- and off-budget components. All federal government receipts and outlays are on-budget except those for Social Security, which appear off-budget. Social Security is excluded from the on-budget aggregates under provisions of the Balanced Budget and Emergency Deficit Control Act of 1985. The act specifies, though, that the total deficit--including receipts and outlays for Social Security--must be considered in determining whether the federal government is likely to exceed the statutory deficit targets. The amount of the total deficit is also critical in establishing the federal government's borrowing re- quirements. Debt held by the public represents the amount borrowed by the federal government over the years, and it increases each year by roughly the amount of the total deficit.

The major sources of federal revenue (including off-budget revenues) are presented in Tables G-3 and G-4. These sources are individual and corporate income taxes, social insurance taxes and contributions, excise taxes, estate and gift taxes, customs duties, and miscellaneous receipts. Social insurance taxes and contributions include employer and employee payments for Social Security, Medicare, Railroad Retirement, and Unemployment Insurance, and pension contributions by federal workers. Excise taxes are levied on certain products and services, such as gasoline, alcohol, and air travel. The wind-

fall profit tax on domestic oil producers was enacted in 1980, and is classified as an excise tax. Miscellaneous receipts consist mainly of deposits of earnings by the Federal Reserve System.

Total on- and off-budget outlays for major spending categories are shown in Tables G-5 and G-6. These categories are national defense, entitlements and other mandatory spending, nondefense discretionary spending, net interest, and offsetting receipts.

National defense and *net interest* are identical to the budget functions with the same titles (budget functions 050 and 900, respectively). The historical data for national defense have been adjusted to include imputed accruals for military retirement and are consistent with the definition of national defense used in the baseline projections.

Entitlements and other mandatory spending include programs for which spending is governed by laws making all who meet certain requirements eligible to receive payments. (Additional detail on entitlement spending is found in Tables G-7 and G-8.) Many entitlement programs require that recipients have incomes below a certain level. The largest such means-tested program is Medicaid. Other means-tested entitlements include Food Stamps, Aid to Families with Dependent Children, and Supplemental Security Income.

Most entitlement programs are not means-tested, Social Security and Medicare being the largest such programs. Other retirement and disability programs include federal civilian and military retirement, Railroad Retirement, payments to disabled coal miners, and several smaller programs. Unemployment compensation, another non-means-tested program, is especially large during recessions, such as the one in 1981 and 1982. Other non-means-tested entitlements include farm price supports, general revenue sharing, revolving funds such as the Federal Deposit Insurance Corporation, and a large number of smaller trust funds.

Nondefense discretionary spending consists of all programs, other than defense and entitlements, controlled through the appropriation process. Examples include most direct federal spending for energy, the administration of justice, foreign economic and military aid, space, and natural resources. Federal grants-in-aid to state and local gov-

ernments for transportation, education, housing, and community development are also considered to be discretionary.

Offsetting receipts include the federal government's contribution toward employee retirement, fees and charges such as Medicare premiums, and receipts from the use of federally controlled land and offshore territory. The bulk of these receipts from the use of federal property are rents and royalties from oil, gas, and other mineral development and proceeds from timber and power sales.

The historical data in Tables G-1 through G-8, as well as the baseline projections discussed in Chapter II, incorporate minor changes to the spending categories. The largest change shifts the administrative expenses of certain entitlement programs (Family Support Administration, Unemployment Trust Fund) from the entitlement and other mandatory spending category to the nondefense discretionary spending category. The administrative expenses of other entitlement programs have long been included in the nondefense discretionary category. In addition, certain transportation subsidies have been moved to the nondefense discretionary category from entitlements and other mandatory spending. The purpose of these changes is to have the nondefense discretionary spending category correspond with the definition of discretionary spending in the Balanced Budget and Emergency Deficit Control Act of 1985.

The 1986 budget totals reflect a change in the treatment of demand notes issued by the Federal Deposit Insurance Corporation; included in the totals is $443 million in notes that previously had not been treated as outlays. For 1987, the Office of Management and Budget is treating notes payable issued by the Federal Savings and Loan Insurance Corporation as outlays; they are not treating these notes as outlays in previous years.

TABLE G-1. REVENUES, OUTLAYS, DEFICITS, AND DEBT HELD BY THE PUBLIC, FISCAL YEARS 1962-1987
(In billions of dollars)

Fiscal Year	Revenues			Outlays			Deficit (-) or Surplus	Debt Held by the Public
	On-Budget	Off-Budget	Total	On-Budget	Off-Budget	Total		
1962	87.4	12.3	99.7	93.3	13.5	106.8	-7.1	248.4
1963	92.4	14.2	106.6	96.4	15.0	111.3	-4.8	254.5
1964	96.2	16.4	112.6	102.8	15.7	118.5	-5.9	257.6
1965	100.1	16.7	116.8	101.7	16.5	118.2	-1.4	261.6
1966	111.7	19.1	130.8	114.8	19.7	134.5	-3.7	264.7
1967	124.4	24.4	148.8	137.0	20.4	157.5	-8.6	267.5
1968	128.1	24.9	153.0	155.8	22.3	178.1	-25.2	290.6
1969	157.9	29.0	186.9	158.4	25.2	183.6	3.2	279.5
1970	159.3	33.5	192.8	168.0	27.6	195.6	-2.8	284.9
1971	151.3	35.8	187.1	177.3	32.8	210.2	-23.0	304.3
1972	167.4	39.9	207.3	193.8	36.9	230.7	-23.4	323.8
1973	184.7	46.1	230.8	200.1	45.6	245.7	-14.9	343.0
1974	209.3	53.9	263.2	217.3	52.1	269.4	-6.1	346.1
1975	216.6	62.5	279.1	271.9	60.4	332.3	-53.2	396.9
1976	231.7	66.4	298.1	302.2	69.6	371.8	-73.7	480.3
1977	278.7	76.8	355.6	328.5	80.7	409.2	-53.6	551.8
1978	314.2	85.4	399.6	369.1	89.7	458.7	-59.2	610.9
1979	365.3	98.0	463.3	403.5	100.0	503.5	-40.2	644.6
1980	403.9	113.2	517.1	476.6	114.3	590.9	-73.8	715.1
1981	469.1	130.2	599.3	543.0	135.2	678.2	-78.9	794.4
1982	474.3	143.5	617.8	594.3	151.4	745.7	-127.9	929.4
1983	453.2	147.3	600.6	661.2	147.1	808.3	-207.8	1,141.8
1984	500.4	166.1	666.5	686.0	165.8	851.8	-185.3	1,312.6
1985	547.9	186.2	734.1	769.5	176.8	946.3	-212.3	1,509.9
1986	568.9	200.2	769.1	806.8	183.5	990.3	-221.2	1,745.6
1987	640.8	213.4	854.1	810.7	193.9	1,004.6	-150.4	1,896.9

SOURCE: Congressional Budget Office.

TABLE G-2. REVENUES, OUTLAYS, DEFICITS, AND DEBT HELD BY THE PUBLIC, FISCAL YEARS 1962-1987
(As a percentage of GNP)

Fiscal Year	Revenues			Outlays			Deficit (-) or Surplus	Debt Held by the Public
	On-Budget	Off-Budget	Total	On-Budget	Off-Budget	Total		
1962	15.7	2.2	17.9	16.7	2.4	19.2	-1.3	44.5
1963	15.7	2.4	18.1	16.4	2.5	18.9	-0.8	43.3
1964	15.3	2.6	17.9	16.3	2.5	18.8	-0.9	40.9
1965	14.9	2.5	17.4	15.1	2.5	17.6	-0.2	38.9
1966	15.1	2.6	17.7	15.5	2.7	18.2	-0.5	35.8
1967	15.7	3.1	18.7	17.2	2.6	19.8	-1.1	33.7
1968	15.1	2.9	18.0	18.3	2.6	21.0	-3.0	34.2
1969	17.0	3.1	20.1	17.0	2.7	19.8	0.3	30.1
1970	16.1	3.4	19.5	17.0	2.8	19.8	-0.3	28.8
1971	14.3	3.4	17.7	16.8	3.1	19.9	-2.2	28.8
1972	14.5	3.5	18.0	16.8	3.2	20.0	-2.0	28.1
1973	14.4	3.6	18.0	15.6	3.6	19.2	-1.2	26.8
1974	14.8	3.8	18.6	15.3	3.7	19.0	-0.4	24.4
1975	14.2	4.1	18.3	17.9	4.0	21.8	-3.5	26.1
1976	13.6	3.9	17.6	17.8	4.1	21.9	-4.3	28.3
1977	14.4	4.0	18.4	17.0	4.2	21.2	-2.8	28.5
1978	14.5	3.9	18.4	17.0	4.1	21.1	-2.7	28.1
1979	14.9	4.0	18.9	16.5	4.1	20.6	-1.6	26.3
1980	15.1	4.2	19.4	17.8	4.3	22.1	-2.8	26.8
1981	15.7	4.4	20.1	18.2	4.5	22.7	-2.6	26.6
1982	15.1	4.6	19.7	18.9	4.8	23.8	-4.1	29.6
1983	13.6	4.4	18.1	19.9	4.4	24.3	-6.3	34.4
1984	13.6	4.5	18.1	18.6	4.5	23.1	-5.0	35.6
1985	13.9	4.7	18.6	19.5	4.5	24.0	-5.4	38.3
1986	13.6	4.8	18.3	19.2	4.4	23.6	-5.3	41.6
1987	14.5	4.8	19.4	18.4	4.4	22.8	-3.4	43.0

SOURCE: Congressional Budget Office.

TABLE G-3. REVENUES BY MAJOR SOURCE, FISCAL YEARS 1962-1987 (In billions of dollars)

Fiscal Year	Individual Income Taxes	Corporate Income Taxes	Social Insurance Taxes and Contributions	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total Revenues
1962	45.6	20.5	17.0	12.5	2.0	1.1	0.8	99.7
1963	47.6	21.6	19.8	13.2	2.2	1.2	1.0	106.6
1964	48.7	23.5	22.0	13.7	2.4	1.3	1.1	112.6
1965	48.8	25.5	22.2	14.6	2.7	1.4	1.6	116.8
1966	55.4	30.1	25.5	13.1	3.1	1.8	1.9	130.8
1967	61.5	34.0	32.6	13.7	3.0	1.9	2.1	148.8
1968	68.7	28.7	33.9	14.1	3.1	2.0	2.5	153.0
1969	87.2	36.7	39.0	15.2	3.5	2.3	2.9	186.9
1970	90.4	32.8	44.4	15.7	3.6	2.4	3.4	192.8
1971	86.2	26.8	47.3	16.6	3.7	2.6	3.9	187.1
1972	94.7	32.2	52.6	15.5	5.4	3.3	3.6	207.3
1973	103.2	36.2	63.1	16.3	4.9	3.2	3.9	230.8
1974	119.0	38.6	75.1	16.8	5.0	3.3	5.4	263.2
1975	122.4	40.6	84.5	16.6	4.6	3.7	6.7	279.1
1976	131.6	41.4	90.8	17.0	5.2	4.1	8.0	298.1
1977	157.6	54.9	106.5	17.5	7.3	5.2	6.5	355.6
1978	181.0	60.0	121.0	18.4	5.3	6.6	7.4	399.6
1979	217.8	65.7	138.9	18.7	5.4	7.4	9.3	463.3
1980	244.1	64.6	157.8	24.3	6.4	7.2	12.7	517.1
1981	285.9	61.1	182.7	40.8	6.8	8.1	13.8	599.3
1982	297.7	49.2	201.5	36.3	8.0	8.9	16.2	617.8
1983	288.9	37.0	209.0	35.3	6.1	8.7	15.6	600.6
1984	298.4	56.9	239.4	37.4	6.0	11.4	17.0	666.5
1985	334.5	61.3	265.2	36.0	6.4	12.1	18.5	734.1
1986	349.0	63.1	283.9	32.9	7.0	13.3	19.9	769.1
1987	392.6	83.9	303.3	32.5	7.5	15.0	19.3	854.1

SOURCE: Congressional Budget Office.

TABLE G-4. REVENUES BY MAJOR SOURCE, FISCAL YEARS 1962-1987 (As a percentage of GNP)

Fiscal Year	Individual Income Taxes	Corporate Income Taxes	Social Insurance Taxes and Contributions	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total Revenues
1962	8.2	3.7	3.1	2.2	0.4	0.2	0.2	17.9
1963	8.1	3.7	3.4	2.2	0.4	0.2	0.2	18.1
1964	7.7	3.7	3.5	2.2	0.4	0.2	0.2	17.9
1965	7.3	3.8	3.3	2.2	0.4	0.2	0.2	17.4
1966	7.5	4.1	3.5	1.8	0.4	0.2	0.3	17.7
1967	7.7	4.3	4.1	1.7	0.4	0.2	0.3	18.7
1968	8.1	3.4	4.0	1.7	0.4	0.2	0.3	18.0
1969	9.4	3.9	4.2	1.6	0.4	0.2	0.3	20.1
1970	9.1	3.3	4.5	1.6	0.4	0.2	0.3	19.5
1971	8.2	2.5	4.5	1.6	0.4	0.2	0.4	17.7
1972	8.2	2.8	4.6	1.3	0.5	0.3	0.3	18.0
1973	8.1	2.8	4.9	1.3	0.4	0.2	0.3	18.0
1974	8.4	2.7	5.3	1.2	0.4	0.2	0.4	18.6
1975	8.0	2.7	5.6	1.1	0.3	0.2	0.4	18.3
1976	7.7	2.4	5.3	1.0	0.3	0.2	0.5	17.6
1977	8.2	2.8	5.5	0.9	0.4	0.3	0.3	18.4
1978	8.3	2.8	5.6	0.8	0.2	0.3	0.3	18.4
1979	8.9	2.7	5.7	0.8	0.2	0.3	0.4	18.9
1980	9.1	2.4	5.9	0.9	0.2	0.3	0.5	19.4
1981	9.6	2.0	6.1	1.4	0.2	0.3	0.5	20.1
1982	9.5	1.6	6.4	1.2	0.3	0.3	0.5	19.7
1983	8.7	1.1	6.3	1.1	0.2	0.3	0.5	18.1
1984	8.1	1.5	6.5	1.0	0.2	0.3	0.5	18.1
1985	8.5	1.6	6.7	0.9	0.2	0.3	0.5	18.6
1986	8.3	1.5	6.8	0.8	0.2	0.3	0.5	18.3
1987	8.9	1.9	6.9	0.7	0.2	0.3	0.4	19.4

SOURCE: Congressional Budget Office.

TABLE G-5. OUTLAYS FOR MAJOR SPENDING CATEGORIES, FISCAL YEARS 1962-1987 (In billions of dollars)

Fiscal Year	National Defense	Entitlements and Other Mandatory Spending	Nondefense Discretionary Spending	Net Interest	Offsetting Receipts	Total Outlays
1962	52.3	30.5	24.1	6.9	-7.0	106.8
1963	53.4	33.0	25.3	7.7	-8.1	111.3
1964	54.8	34.3	29.1	8.2	-7.8	118.5
1965	50.6	34.5	32.5	8.6	-8.0	118.2
1966	58.1	37.2	38.4	9.4	-8.5	134.5
1967	71.4	45.0	41.1	10.3	-10.3	157.5
1968	81.9	52.1	43.8	11.1	-10.8	178.1
1969	82.5	58.4	41.2	12.7	-11.1	183.6
1970	81.7	66.2	45.1	14.4	-11.6	195.6
1971	78.9	80.6	50.1	14.8	-14.2	210.2
1972	79.2	94.2	56.0	15.5	-14.2	230.7
1973	76.7	110.3	59.5	17.3	-18.1	245.7
1974	79.3	124.0	65.9	21.4	-21.3	269.4
1975	86.5	155.8	83.3	23.2	-18.5	332.3
1976	89.6	182.2	93.0	26.7	-19.7	371.8
1977	97.2	197.2	106.5	29.9	-21.6	409.2
1978	104.5	217.5	124.3	35.4	-23.0	458.7
1979	116.3	235.7	134.8	42.6	-26.1	503.5
1980	134.0	278.2	156.6	52.5	-30.3	590.9
1981	157.5	321.0	170.3	68.7	-39.3	678.2
1982	185.3	357.5	155.1	85.0	-37.2	745.7
1983	209.9	399.0	157.5	89.8	-47.8	808.3
1984	227.4	394.8	165.7	111.1	-47.2	851.8
1985	252.7	437.8	175.8	129.4	-49.5	946.3
1986	273.4	455.4	174.1	136.0	-48.6	990.3
1987	282.0	474.1	163.9	138.6	-54.1	1,004.6

SOURCE: Congressional Budget Office.

TABLE G-6. OUTLAYS FOR MAJOR SPENDING CATEGORIES, FISCAL YEARS 1962-1987 (As a percentage of GNP)

Fiscal Year	National Defense	Entitlements and Other Mandatory Spending	Nondefense Discretionary Spending	Net Interest	Offsetting Receipts	Total Outlays
1962	9.4	5.5	4.3	1.2	-1.3	19.2
1963	9.1	5.6	4.3	1.3	-1.4	18.9
1964	8.7	5.4	4.6	1.3	-1.2	18.8
1965	7.5	5.1	4.8	1.3	-1.2	17.6
1966	7.9	5.0	5.2	1.3	-1.2	18.2
1967	9.0	5.7	5.2	1.3	-1.3	19.8
1968	9.6	6.1	5.2	1.3	-1.3	21.0
1969	8.9	6.3	4.4	1.4	-1.2	19.8
1970	8.2	6.7	4.6	1.5	-1.2	19.8
1971	7.5	7.6	4.7	1.4	-1.3	19.9
1972	6.9	8.2	4.9	1.3	-1.2	20.0
1973	6.0	8.6	4.6	1.3	-1.4	19.2
1974	5.6	8.8	4.7	1.5	-1.5	19.0
1975	5.7	10.2	5.6	1.5	-1.2	21.8
1976	5.3	10.7	5.5	1.6	-1.2	21.9
1977	5.0	10.2	5.5	1.5	-1.1	21.2
1978	4.8	10.0	5.7	1.6	-1.1	21.1
1979	4.8	9.6	5.5	1.7	-1.1	20.6
1980	5.0	10.4	5.9	2.0	-1.1	22.1
1981	5.3	10.7	5.7	2.3	-1.3	22.7
1982	5.9	11.4	4.9	2.7	-1.2	23.8
1983	6.3	12.0	4.7	2.7	-1.4	24.3
1984	6.2	10.7	4.5	3.0	-1.3	23.1
1985	6.4	11.1	4.5	3.3	-1.3	24.0
1986	6.5	10.9	4.2	3.2	-1.2	23.6
1987	6.4	10.8	3.7	3.1	-1.2	22.8

SOURCE: Congressional Budget Office.

TABLE G-7. OUTLAYS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING, FISCAL YEARS 1962-1987
(In billions of dollars)

Fiscal Year	Medicaid	Other Means-Tested Programs	Social Security	Medicare	Other Retirement and Disability	Unemployment Compensation	Other Non-Means-Tested Programs	Total Entitlements and Other Mandatory Spending
1962	0.1	4.2	14.1	--	2.6	3.5	5.9	30.5
1963	0.2	4.6	15.5	--	2.9	3.6	6.3	33.0
1964	0.2	4.8	16.3	--	3.3	3.4	6.3	34.3
1965	0.3	5.0	17.1	--	3.5	2.7	5.9	34.5
1966	0.8	5.0	20.2	0.0	4.1	2.2	4.9	37.2
1967	1.2	5.0	21.3	3.2	4.8	2.3	7.2	45.0
1968	1.8	5.7	23.0	5.1	5.7	2.2	8.7	52.1
1969	2.3	6.4	26.5	6.3	5.2	2.3	9.4	58.4
1970	2.7	7.4	29.4	6.8	6.6	3.1	10.2	66.2
1971	3.4	10.0	34.8	7.5	8.2	5.8	10.9	80.6
1972	4.6	11.7	39.0	8.4	9.5	6.7	14.3	94.2
1973	4.6	11.5	47.9	9.0	11.5	4.9	21.0	110.3
1974	5.8	13.9	54.5	10.8	13.6	5.6	19.8	124.0
1975	6.8	18.9	63.1	14.1	16.4	12.8	23.6	155.8
1976	8.6	22.2	72.2	17.0	18.6	18.6	25.1	182.2
1977	9.9	24.0	83.2	20.7	21.2	14.3	24.0	197.2
1978	10.7	25.3	91.8	25.0	23.2	10.8	30.7	217.5
1979	12.4	27.1	101.9	28.9	27.3	9.8	28.4	235.8
1980	14.0	32.6	117.1	33.9	31.5	16.9	32.2	278.2
1981	16.8	37.8	138.0	41.3	36.6	18.3	32.2	321.0
1982	17.4	38.1	154.1	49.2	39.8	22.2	36.7	357.5
1983	19.0	40.6	168.6	55.5	41.9	29.7	43.6	399.0
1984	20.1	41.6	176.1	61.0	43.3	16.8	36.0	394.8
1985	22.7	43.7	186.5	69.8	44.0	15.8	55.4	437.8
1986	25.0	45.9	196.7	74.2	46.7	16.1	50.7	455.4
1987	27.4	46.5	205.2	79.9	49.2	17.1	48.9	474.1

SOURCE: Congressional Budget Office.

TABLE G-8. OUTLAYS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING, FISCAL YEARS 1962-1987
(As a percentage of GNP)

Fiscal Year	Medicaid	Other Means-Tested Programs	Social Security	Medicare	Other Retirement and Disability	Unemployment Compensation	Other Non-Means-Tested Programs	Total Entitlements and Other Mandatory Spending
1962	0.0	0.8	2.5	--	0.5	0.6	1.1	5.5
1963	0.0	0.8	2.6	--	0.5	0.6	1.1	5.6
1964	0.0	0.8	2.6	--	0.5	0.5	1.0	5.4
1965	0.0	0.7	2.5	--	0.5	0.4	0.9	5.1
1966	0.1	0.7	2.7	0.0	0.6	0.3	0.7	5.0
1967	0.1	0.6	2.7	0.4	0.6	0.3	0.9	5.7
1968	0.2	0.7	2.7	0.6	0.7	0.3	1.0	6.1
1969	0.2	0.7	2.9	0.7	0.6	0.2	1.0	6.3
1970	0.3	0.7	3.0	0.7	0.7	0.3	1.0	6.7
1971	0.3	0.9	3.3	0.7	0.8	0.5	1.0	7.6
1972	0.4	1.0	3.4	0.7	0.8	0.6	1.2	8.2
1973	0.4	0.9	3.7	0.7	0.9	0.4	1.6	8.6
1974	0.4	1.0	3.8	0.8	1.0	0.4	1.4	8.8
1975	0.4	1.2	4.1	0.9	1.1	0.8	1.6	10.2
1976	0.5	1.3	4.3	1.0	1.1	1.1	1.5	10.7
1977	0.5	1.2	4.3	1.1	1.1	0.7	1.2	10.2
1978	0.5	1.2	4.2	1.1	1.1	0.5	1.4	10.0
1979	0.5	1.1	4.2	1.2	1.1	0.4	1.2	9.6
1980	0.5	1.2	4.4	1.3	1.2	0.6	1.2	10.4
1981	0.6	1.3	4.6	1.4	1.2	0.6	1.1	10.7
1982	0.6	1.2	4.9	1.6	1.3	0.7	1.2	11.4
1983	0.6	1.2	5.1	1.7	1.3	0.9	1.3	12.0
1984	0.5	1.1	4.8	1.7	1.2	0.5	1.0	10.7
1985	0.6	1.1	4.7	1.8	1.1	0.4	1.4	11.1
1986	0.6	1.1	4.7	1.8	1.1	0.4	1.2	10.9
1987	0.6	1.1	4.7	1.8	1.1	0.4	1.1	10.7

SOURCE: Congressional Budget Office.

APPENDIX H

MAJOR CONTRIBUTORS TO THE REVENUE AND SPENDING PROJECTIONS

The following analysts prepared the revenue and spending projections in this report:

Revenue Projections

Mark Booth	Corporate income taxes, Federal Reserve System earnings
Jon Hakken	Windfall profit tax
Richard Kasten	Individual income taxes
Jeffrey Miller	Excise taxes
Kathleen O'Connell	Individual income taxes, estate and gift taxes
Marianne Page	Customs duties, miscellaneous receipts
Linda Radey	Social insurance contributions, excise taxes
Frank Sammartino	Individual income taxes

Spending Projections

Defense and International Affairs

Eugene Bryton	Defense
Kent Christensen	International affairs
Ray Hall	Defense
Barbara Hollinshead	Defense
William Myers	Defense
Amy Plapp	Defense
Joseph Whitehill	International affairs
Ben Wolters	Defense

Spending Projections (continued)

Human Resources

Paul Cullinan	Social Security
Richard Curley	Supplemental Security Income, veterans' education
Carmela Dyer	Public Health Service, federal retirement
Alan Fairbank	Hospital Insurance
Holly Harvey	Supplementary Medical Insurance
Deborah Kalcevic	Education
Jean Kayser	Health programs
Julia Isaacs	Food Stamps, child nutrition
Donald Muse	Medicaid, Medicare
Michael Namian	Social services
Janice Peskin	Aid to Families with Dependent Children, child support enforcement
Michael Pogue	Unemployment Insurance, training programs
Kathleen Shepherd	Veterans' benefits

Natural and Physical Resources

Kim Cawley	Energy
Carol Cohen	Community and regional development
Douglas Criscitello	Commerce, disaster relief and insurance
Peter Fontaine	Energy
Theresa Gullo	Water resources, conservation, and land management
James Hearn	General government, Agriculture Credit Insurance Fund, Outer Continental Shelf receipts
Hsin-Hui Hsu	Agriculture
Mary Maginniss	Postal Service, deposit insurance, Small Business Administration
Eileen Manfredi	Agriculture

Spending Projections (continued)

Natural and Physical Resources (continued)

Marjorie Miller	Transportation
Andrew Morton	Agriculture
Deborah Reis	Recreation, pollution control, water transportation
Mitchell Rosenfeld	Air transportation, justice
Brent Shipp	Housing and mortgage credit
Michael Sieverts	Science and space, justice, other natural resources

Other

Janet Airis	Appropriation bills
Edward Blau	Appropriation bills
Paul Christy	Other interest
David Elkes	National Income and Product Accounts
Betty Embrey	Appropriation bills
Kenneth Farris	Computer support
Danila Girerd	Credit analysis
Glen Goodnow	Authorization bills
Vernon Hammett	Computer support
Sandra Hoffman	Computer support
Richard Krop	Civlian agency pay
Fritz Maier	Computer support
Roy Meyers	Budget process
Kathy Ruffing	Treasury borrowing, interest, and debt
Robert Sempsey	Appropriation bills
Robert Seiler	Budget process
Jeff Swersey	Computer support
Karla Trujillo	Appropriation bills
Paula Williams	Computer support

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